DECEMBER 28, 1959

PAPER TRADE JOURNAL

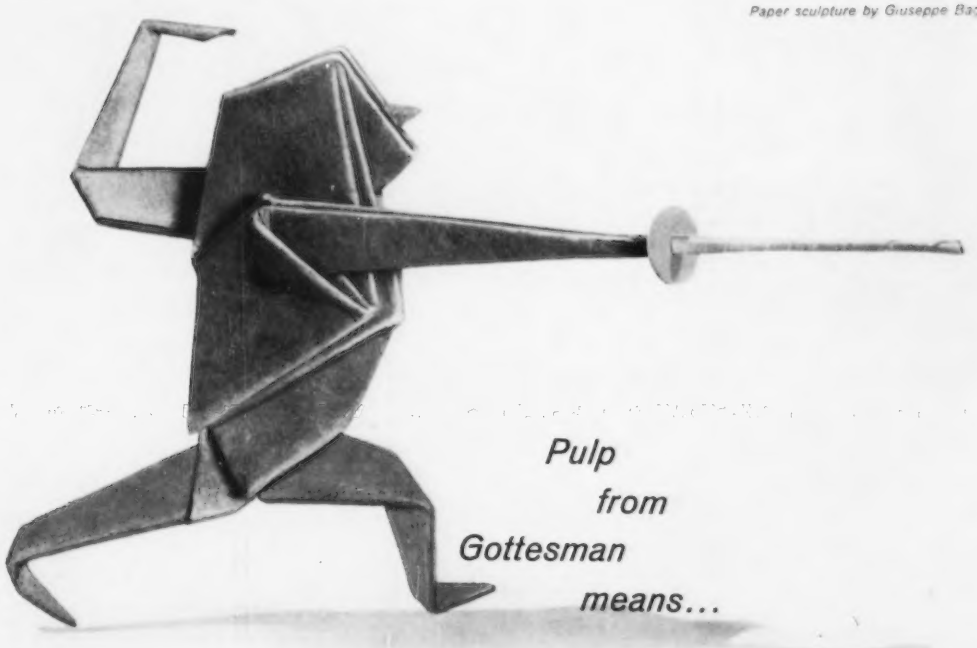
Details Given on Jordan Installation and Maintenance

Significant Facts Revealed on Sheet Separation at the Couch

Lewis Mill Improves Specialty Board Machine

For Your Convenience! This Issue Contains the Year-End Index

Paper sculpture by Giuseppe Baggi



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* Idea submitted by John Ramsey, Asst. Production Mgr., The Champion Paper and Fibre Company, Hamilton, Ohio

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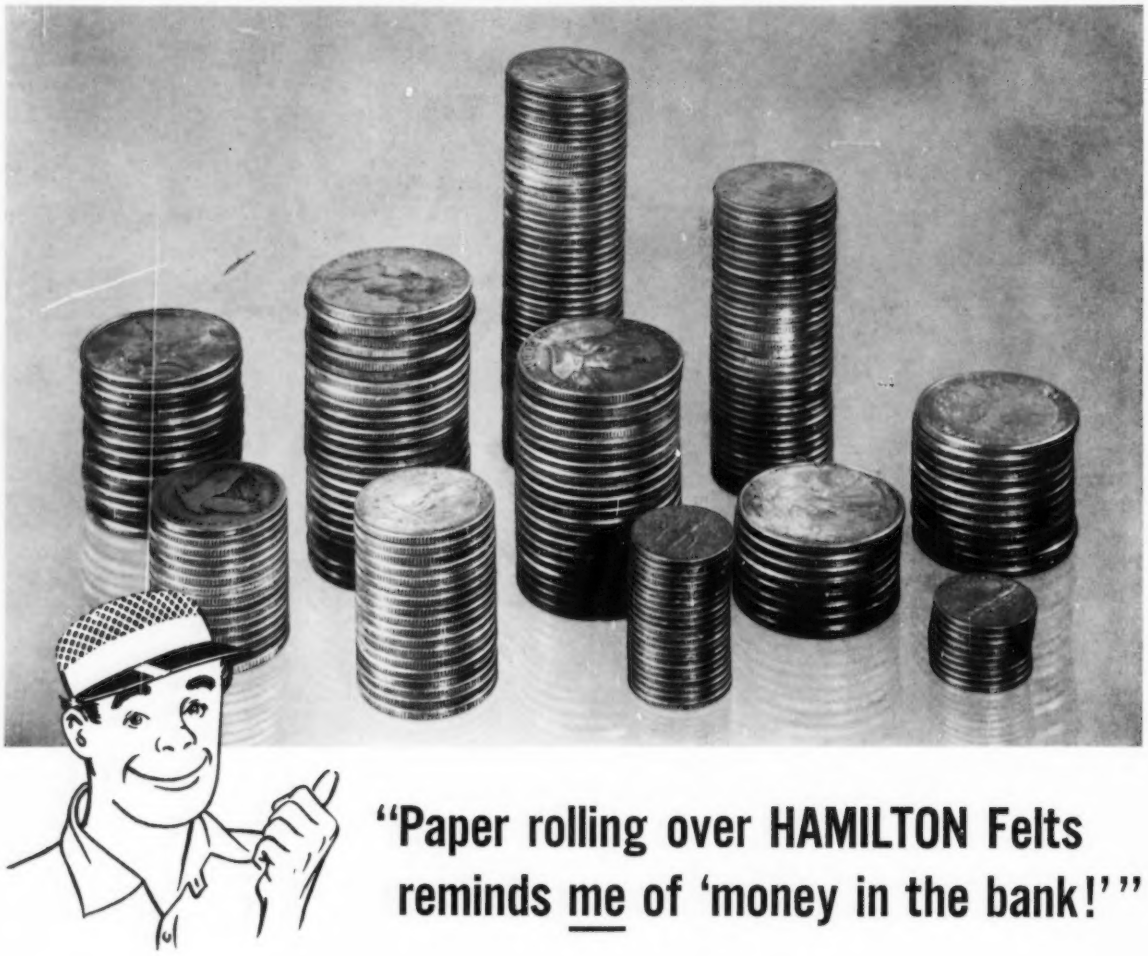

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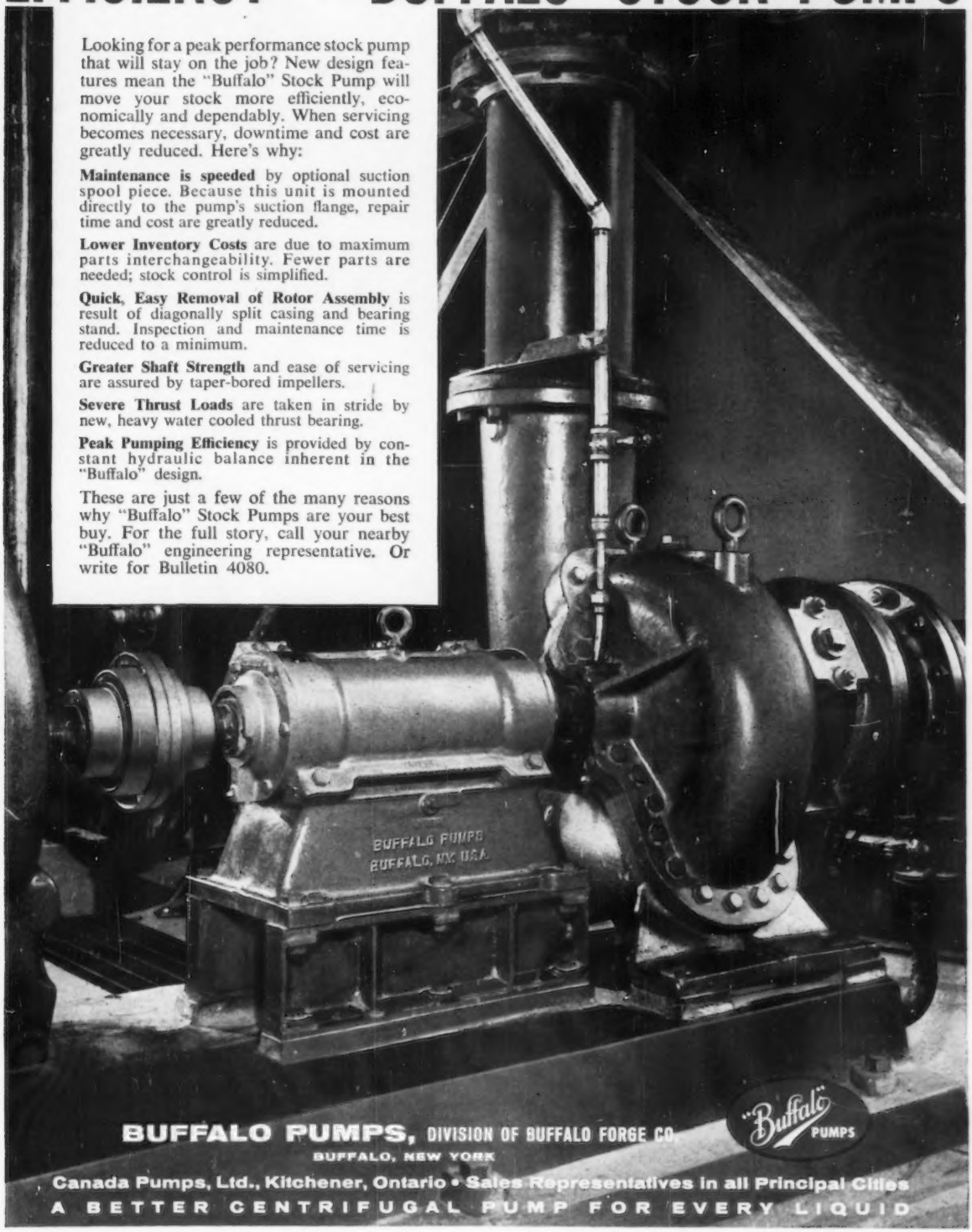

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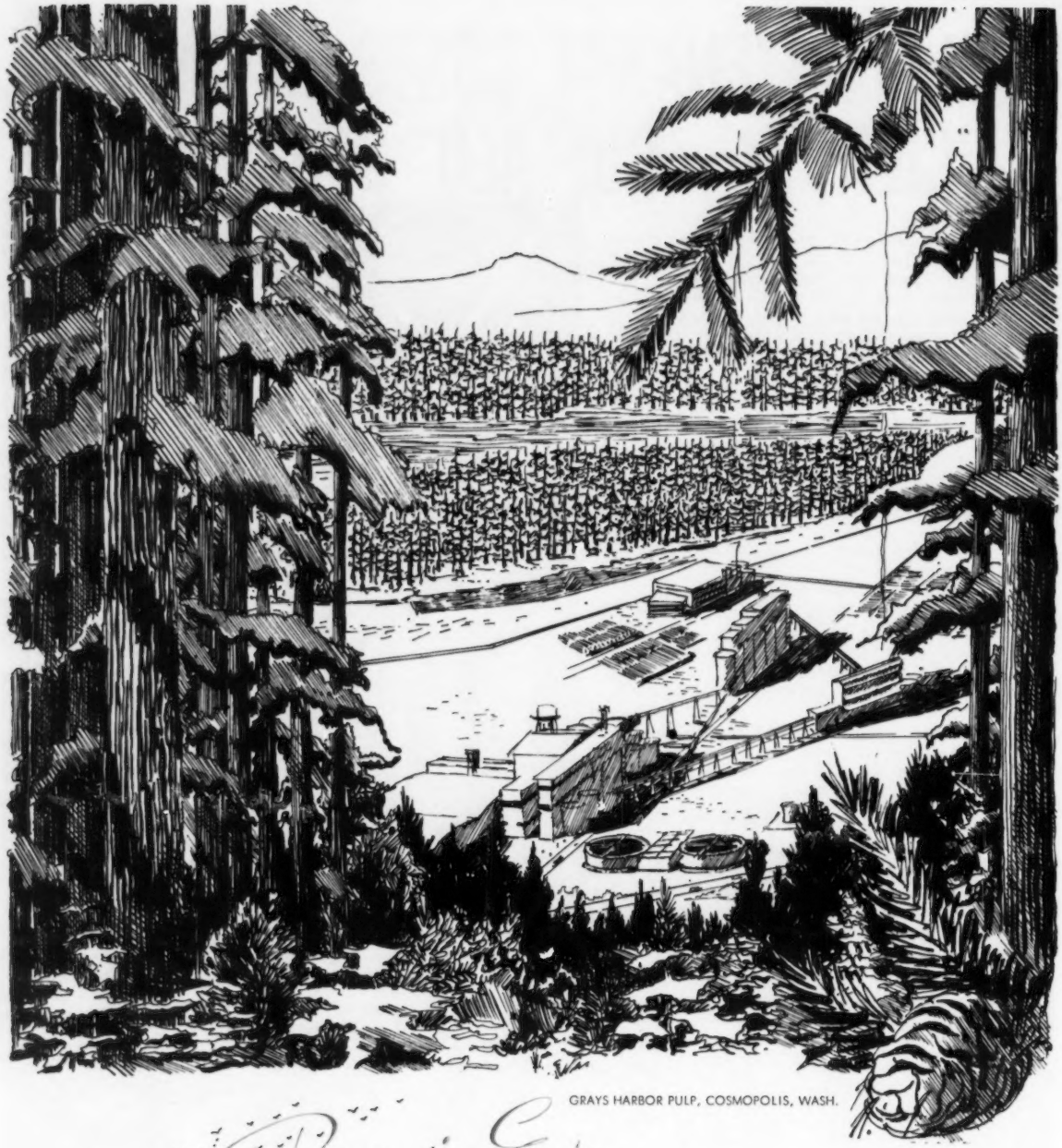

GRAYS HARBOR PULP, COSMOPOLIS, WASH.

Bird's Eye

VIEW

The new Grays Harbor Mill, eighty miles south of Tacoma, converts timber into pulp in a continuous operation. From its 10-acre woodyard to finished pulp warehouse, the Grays Harbor operation is under the close supervision of Weyerhaeuser research people who are constantly on the lookout for improved pulping methods.

WEYERHAEUSER

PAPER TRADE JOURNAL

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Week of DECEMBER 28, 1959—*Vol. 143, No. 52*

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REMEMBER THESE DATES

January 21. Western Michigan University Fourth Annual Pulp and Paper Conference, Kalamazoo, Mich.

January 25-28. Plant Maintenance and Engineering Show, Convention Hall, Philadelphia, Pa.

January 26-29. Technical Section, Canadian Pulp and Paper Ass'n., Queen Elizabeth Hotel, Montreal. Note meeting starts Tuesday.

February 22-25. Paper Week in New York.

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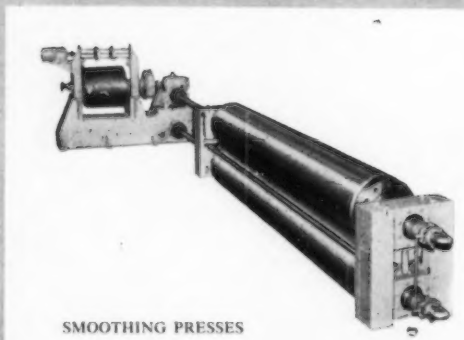
how to operate at 120% of capacity



SMOOTHING PRESSES

PATTON

Population growth alone dictates that 1962's demand will be about 120% of today's mill capacity. Somebody will have to meet that need. If you can't your competitors will.

They may be doing it right now by quietly replacing equipment of marginal profitability. While the new equipment may not achieve its maximum productivity at once, it does start making money at once. First, it improves quality. Second, it permits grade changes. Third, it cuts maintenance. These savings start immediately to build capital reserves for the bigger push to come.

The kind of equipment you buy is important. Only machines incorporating today's engineering advances will be up to the heavy demands of tomorrow. Patton builds this kind of equipment. Progressive mills are asking about it—and buying it.

The Patton Manufacturing Company, Inc., Springfield 2, Ohio.

Trends

October Paper and Board Output Up 5%

Production of paper and board during October was 5% above October a year ago. Paper production was 8% above October last. Output of paperboard during October was 3% above the same month in 1958.

Forecasts 6% Increase for P&B in '60

Paper and board output in 1960 will be 6% above 1959 predicts the U. S. Dept. of Commerce, BDSA in a year-end statement. It points out that 1959 production was more than 10% above 1958.

McCabe Says New High in Capital Expenditures

A new record in capital expenditures for plants and equipment by our industry of $828 million in 1960 is indicated by Thomas B. McCabe, president of Scott Paper Co. in a year-end review and forecast. The previous high of $767 million was set in 1957. The figure predicted for 1960 is 35% above smiliar 1959 expenditures.

Newsprint Production Sets New Record

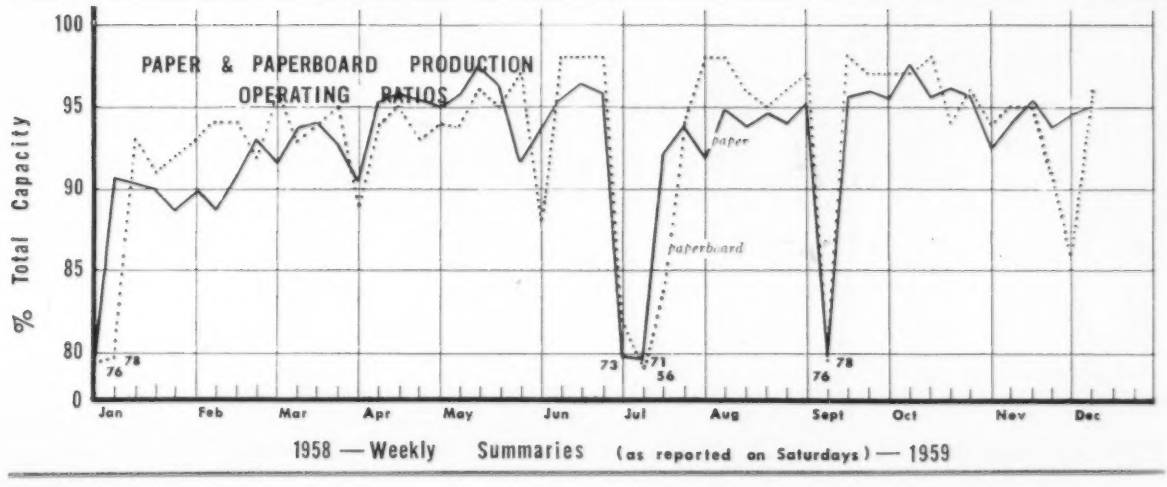
Newsprint production in North America in November set a new all-time high for this month and was 9% above the year ago figure. The separate figures for the United States and Canada were both new records for November. Output for the 11 months was about 6% above the same period in 1958.

Pulp Price Picture Still Cloudy

Only nine days before the beginning of the new quarter the pulp price picture is still not entirely clear. Announcement of two grades of bleached sulphite at different brightness levels by West Coast producers may not only upset the price structure for sulphite but have repercussions on other grades.

Is 10% too Much for 1960?

How well our industry does in 1960 will depend on the extent of the rise in the general economy. In 1959 we ran ahead of general business. Predictions by various experts are that the paper industry in 1960 will run 5 to 7% ahead of 1959. We think that these experts are being overcautious and that we can hit 8 to 10% without a big overall boom.



Mother and daughter read the same page . . . and there's no problem of show-through from either side. TITANOX-A-WD—the water-dispersible anatase titanium dioxide white pigment —insures the opacity that makes reading a pleasure.

Look at both sides of the problem

TITANOX-A-WD keeps not only magazine pages but all types of paper stocks opaque without making them heavy. And it increases printing contrast. One more reason why TITANOX® titanium dioxide pigments—both anatase and rutile, especially TITANOX-RA-50—are No. 1 choice among papermakers. Titanium Pigment Corporation, 111 Broadway, New York 6, New York; offices and warehouses in principal cities.

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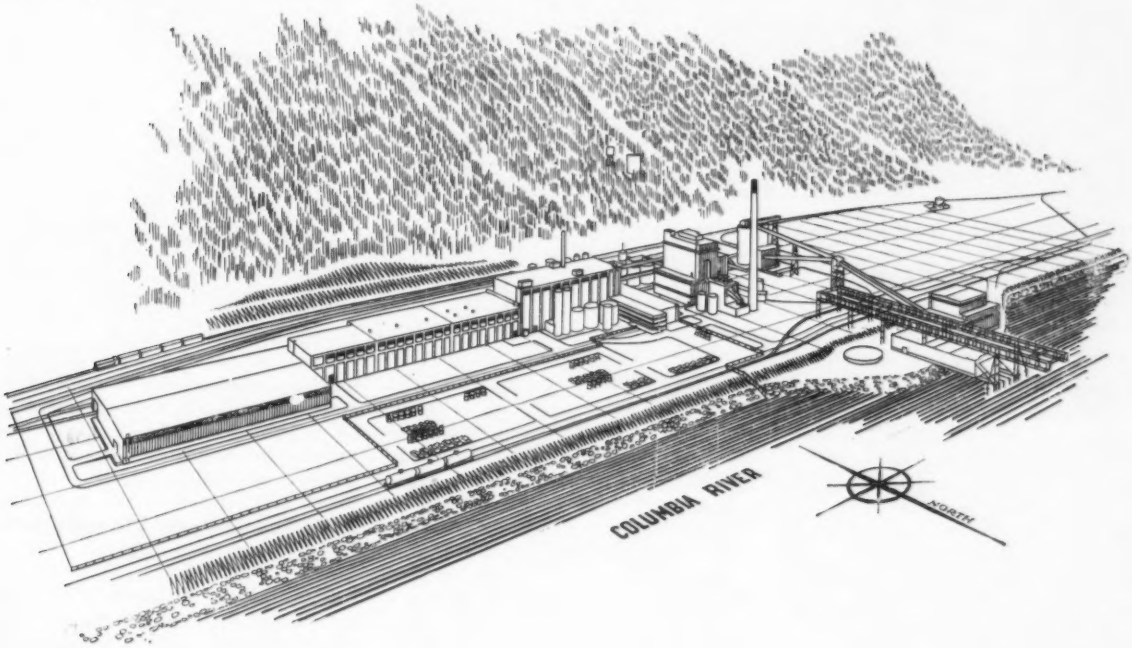
PAPER TRADE JOURNAL

WEEK OF DECEMBER 28, 1959



Celgar Mill Progressing

Target date for completion of the Celgar plant is March 1961 at which time the 500-ton high quality bleached kraft pulp mill should be in operation. Immediately upstream from the pulp mill will be a sawmill complete with planer and dry kiln installations. In addition to two chip silos, provision has been made for 20,000 cunits of chips in open storage between the sawmill and silos.

This integration of sawmill and pulp mill facilities is unique in the interior of British Columbia. It will enable the best use to be made of all the wood being grown on Celgar's 860,000-acre Tree Farm which extends 200 miles north of the mill on either side of the Columbia River.

Logs will be towed down the Arrow Lakes in 50-foot bundles and lifted from the water onto the log desk of the woodroom by a Gantry-type crane which will also handle direct truck or rail log deliveries.

Two ring-type barkers and horizontal chippers will handle logs up to 34 inches in diameter. Bark and sawdust will be burned to make steam.

Another feature of the pulp mill design is the location of central administration offices with direct access to the operating floors for managers and supervisors. The mill will be the first in British Columbia to have a Flakt Airborne dryer and Kamyr continuous digesters.

Beginning in 1960, log production will be increased in order to build wood reserves for the operation of the mill early in 1961.

Southwest Lumber Mills Changes Name

Southwest Lumber Mills, Inc., will henceforth be known as Southwest Forest Industries, Inc., it was announced by J. B. Edens, president. Purpose of the name change is to describe more accurately the type of operations carried on by the company.

Recently Southwest has:

1. Purchased the Colan-Burrus Box Co., Phoenix, manufacturers of wood and paper boxes for the industrial market in Arizona and nearby states.

2. Started construction of a 101,000 square foot plant in Glendale, Ariz., to produce both corrugated board and finished corrugated-board containers, which is expected to be in operation in the next few weeks.

3. Effected a consolidation with three Los Angeles paper products companies—Wilson Paper Co., Vernon Container Corp., and Pioneer Wrapping Co.

4. Announced plans for construction of a $40 million pulp and paper mill in the Snowflake area of northern Arizona.

The company operates sawmills in McNary and Flagstaff, Ariz., and Corrigan, Tex. General offices are in Phoenix. Sales activities for the eastern half of the country are handled from the Chicago office.

TENNESSEE RIVER Pulp & Paper Co.'s new mill under construction at Counce, Tenn. Roll storage warehouse is in left foreground; shop and storeroom building in right top corner; Pickwick Dam, in center background. Foundation work for machine room, washer and digester building, and boilers and caustic area are also shown.

New Mill Reports Progress To Date

Tennessee River Pulp & Paper Co. reports that most of the concrete foundations and underground piping work is done. The flume and chip storage areas are nearly complete as is the roll storage building. The shop and store room building is finished. The lime kiln and caustic work area is progressing satisfactorily. The two major office buildings will be finished by February. Progress to date has been most satisfactory.

This $30,000,000 kraft linerboard mill is being built on the Tennessee River just below Pickwick Dam. The location is at Counce, Tenn., a point slightly northwest of where the Tennessee, Mississippi and Alabama state lines meet.

Federal Paper Board Acquires Manchester Board

Federal Paper Board Co. has arranged to acquire the Manchester Board and Paper Co., Inc., of Richmond, Va. The acquisition will add approximately $9 million to Federal's sales. Combined sales of the two companies for 1959 will be in the vicinity of $86 million. The merger, which will be effected through an exchange of shares, was ratified recently by the directors of Federal. Major stockholders of Manchester have already agreed to the merger. Stockholder meetings of both companies are scheduled for late February.

Plans for the merger were announced jointly by John R. Kennedy, president of Federal, and Frank E. Brown, Manchester's president, who will become a director of Federal.

Federal, with 18 plants in the East and Midwest, is one of the nation's largest producers of boxboard and cartons, and an important manufacturer of machine-made glassware. Manchester operates three paperboard mills, two in Richmond, Virginia, and one in Roanoke Rapids, North Carolina.

Under its present management, the southern company will continue as the Manchester Board & Paper Division of Federal. Manchester's three mills have an annual capacity of over 90,000 tons of boxboard.

KVP-Sutherland Merger Gets Final Approval

Shareholders of the KVP Co. and Sutherland Paper Co. both of Kalamazoo, Mich., overwhelmingly approved the proposed merger of the two companies at meetings held December 18.

Paper and Paper Board Production

The American Paper and Pulp Association reported the ratio of the United States paper production to mill capacity for the week ending December 12, 1959, at 95.0 per cent, compared with 95.4 per cent, revised for the preceding week. The ratio was 90.6 per cent for the corresponding week a year ago.

The National Paperboard Association reported the paperboard production ratio for the week ending December 12, 1959, at 96 per cent, compared with 86 per cent for the preceding week and 94 per cent for the corresponding week a year ago.

(Detailed statistics on page 38)

OPEN HOUSE highlighted TAPPI's recent move to new headquarters at 360 Lexington Ave., New York City. Attending were P. E. Nethercut, secretary-treasurer of the Association; Allen Abrams, former president of TAPPI and now consultant for Arthur D. Little, Inc.; and P. S. Bolton retired, former member of the executive committee.

PAPER PEOPLE

C. E. Steeves

Marathon Announces Personnel Changes

Robert T. Steedman, executive vice president and general manager of Marathon Corp. of Canada, Ltd., has announced that Grant D. Ross, mill and townsite manager since 1952, will leave the organization January 1, 1960. At the same time, Claude E. Steeves, who has been the operation's general superintendent since 1952, was appointed mill manager.

Ian H. Birch, now pulp mill superintendent, will succeed Mr. Steeves as general superintendent. Dwight M. Reid, now technical supervisor, has been named pulp mill superintendent and Bernard Klowak, now Mr. Reid's assistant, has been appointed technical supervisor.

Mr. Ross joined the Marathon organization as plant engineer in 1943. He became mill manager in January 1947 and was named mill and townsite manager six years later.

Joining Marathon Corp. of Canada, Ltd., in 1946 as night superintendent, Mr. Steeves became assistant superintendent of the pulp mill in March, 1947, and operation superintendent in August, 1947.

Mr. Birch joined Marathon in 1946 as a senior chemist. He was bleach plant superintendent and tour foreman of the operating department before assuming his duties as assistant pulp superintendent and later as pulp superintendent.

Beginning in 1947, Mr. Reid served successively as a chemical engineer, control chemist and pulp preparation supervisor until he was named technical supervisor in 1952.

Associated with Marathon since 1950, Mr. Klowak began as a pulp grader and served in various areas of the technical department, including assignments as laboratory supervisor and mill control chemist until he became assistant technical supervisor in 1955.

Ruberoid Names Hall General Sales Manager

Frederick K. Sweeney, sales vice president of The Ruberoid Co., announces the promotions of Joseph G. Hall to general sales manager, and Rhys L. Stanger to assistant general sales manager.

Mr. Hall, who has been affiliated with the building materials industry

J. G. Hall

since the end of World War II, joined Ruberoid in 1950. He was made sales manager of the company's southwest district in Dallas, Tex., in 1954 and was appointed assistant general sales manager of the company a year later.

Mr. Stanger joined Ruberoid in 1950 and was made sales manager at St. Louis in 1956. Earlier this year he was appointed manager of the company's asphalt and asbestos products sales, which post he will continue to hold.

Both men make their headquarters at the company's executive offices in New York City.

Mr. Hall, born in Covington, Ga., in 1919, attended schools in Guilford, Clinton and Madison, Conn. He is a graduate of Hobart College and is a Lieut. Colonel in the U. S. Marine Corps Reserve.

Mr. Stanger, born in Minneapolis, Minn., is a graduate of the Wharton School of the U. of Pennsylvania. He holds a master of business administration degree from New York University.

J. L. Freund

Hammermill Appoints Indust. Relations Director

Appointment of John L. Freund as director of industrial relations at the Erie Division of the Hammermill Paper Co. has been announced.

In this capacity, Mr. Freund will report to Robert S. Young, manager of mill operations, and will be responsible for the administration of the industrial relations department of the Erie Division, including both labor relations and personnel activities as related to manufacturing operations.

Kimberly-Clark Names Byfield To New Post

Abbott Byfield has been named administrative assistant to the chairman of the board of Kimberly-Clark.

Mr. Byfield has been director of new products, corporate produce planning. He began with Kimberly-Clark in 1939 after receiving his master's degree in chemical engineering at Massachusetts Institute of Techonology. In 1941 he was called into government service for five years for the Office of Scientific Research and Development, returning in 1945 as one of 22 Wisconsin scientists and engineers who received a government certificate of appreciation.

Since 1945, Mr. Byfield's career has encompassed technical research, specialized sales research, staff relationship with Kimberly-Clark manufacturing operations and product development. He will be succeeded in his present position by William G. Wilson of Neenah.

E. S. Flinn

E. A. Sitzer

Hurlbut Paper Elects Executive V. P.

Edwin S. Flinn has been elected executive vice president of Hurlbut Paper Co., South Lee, Mass. He will assume the duties of the chief executive officer of the company upon the retirement of E. A. Sitzer on December 31.

Dr. Flinn, Mead employee since 1945, had been assistant to the president of Hurlbut Paper since January, 1959. Hurlbut, leading producer of technical papers for the decorating and industrial laminating industries, is a subsidiary of The Mead Corp.

Dr. Flinn joined Mead as manager of the Tannin Extract division at Lynchburg, Va., in 1945 and remained in that post until his appointment as assistant director of chemical research at Chillicothe, Ohio, in 1953. This was the position he held when he was transferred to Hurlbut in 1959.

A native of Boston, Dr. Flinn received his Bachelors Degree in chemical engineering from Northeastern. He attended Polytechniche Hochscule in Zurich, Switzerland, later obtained a Doctorate in organic chemistry at Pennsylvania State University.

Mr. Sitzer was elected president of the company in 1936, two years after he joined the firm as a sales representive. Hurlbut's reputation today is attributed to his leadership.

Before joining Hurlbut, Mr. Sitzer's interest had been in technical papers and he had an intimate knowledge of industry's need for technical papers and of the papermakers' ability to make this highly specialized product.

Today technical papers constitute the bulk of the production of the Hurlbut mills and the tonnage shipped annually is evidence that Mr. Sitzer made a wise choice that started the Hurlbut firm on its road to becoming a leading producer of these papers.

Early in 1958, Mr. Sitzer linked Hurlbut's long history of fine paper making with that of another old paper company, The Mead Corporation.

Although Mr. Sitzer has retired from active management, he will serve as Chairman of the Board of Directors and will be available for special assignments.

Columbia Names Fila To Chatham Div. Post

Management has announced the appointment of John F. Fila to the position of assistant superintendent, in charge of converting operations at the Chatham Division of Columbia Box Board Mills, Inc.

Recently Mr. Fila has been technical director at Chatham. Prior to that he was assistant to the superintendent at the company's Walloomsac division, Walloomsac, N. Y.

Mr. Fila came to Columbia after spending seventeen years at the Haverhill, Mass., plant of the Continental Can Co., Gair division.

Rayonier Canada Advances Bock and Hamilton

Louis H. Bock has been appointed manager of the research division of Rayonier Canada Limited.

At the same time it was announced that J. Kelvin Hamilton has been named assistant manager of research at the company's Olympic research division at Shelton, Wash., replacing Dr. Bock who held that position.

Dr. Bock replaces Edwin L. Lovell who was recently named manager of research at Rayonier's Olympic research division. The company also maintains an extensive research facility at Whippany, N. J.

Consolidated WP&P Announces Appointments

Three personnel appointments at Consolidated Water Power & Paper Co. were announced.

Pierre A. Fifi has joined the research and development staff as a project chemist according to Dr. S. G. Holt, research manager. Fifi is a native of Belgium where he received a degree in chemistry in 1949. He has been employed in that country by National Center of Metallurgical Research.

R. J. Mader, Biron division manager, has announced the appointment of Harold Andraska as foreman of the sheet metal department and Anton Radtke as assistant mechanical maintenance foreman. Mr. Andraska started with the company in 1936. Mr. Radtke has been employed by the company since 1924.

O-I Names Solon To Paper Products Div. Post

Kevin J. Solon, assistant to the vice president and general sales manager of the Glass Container Division of Owens-Illinois, has been appointed director of product planning and marketing research for the company's Paper Products Division.

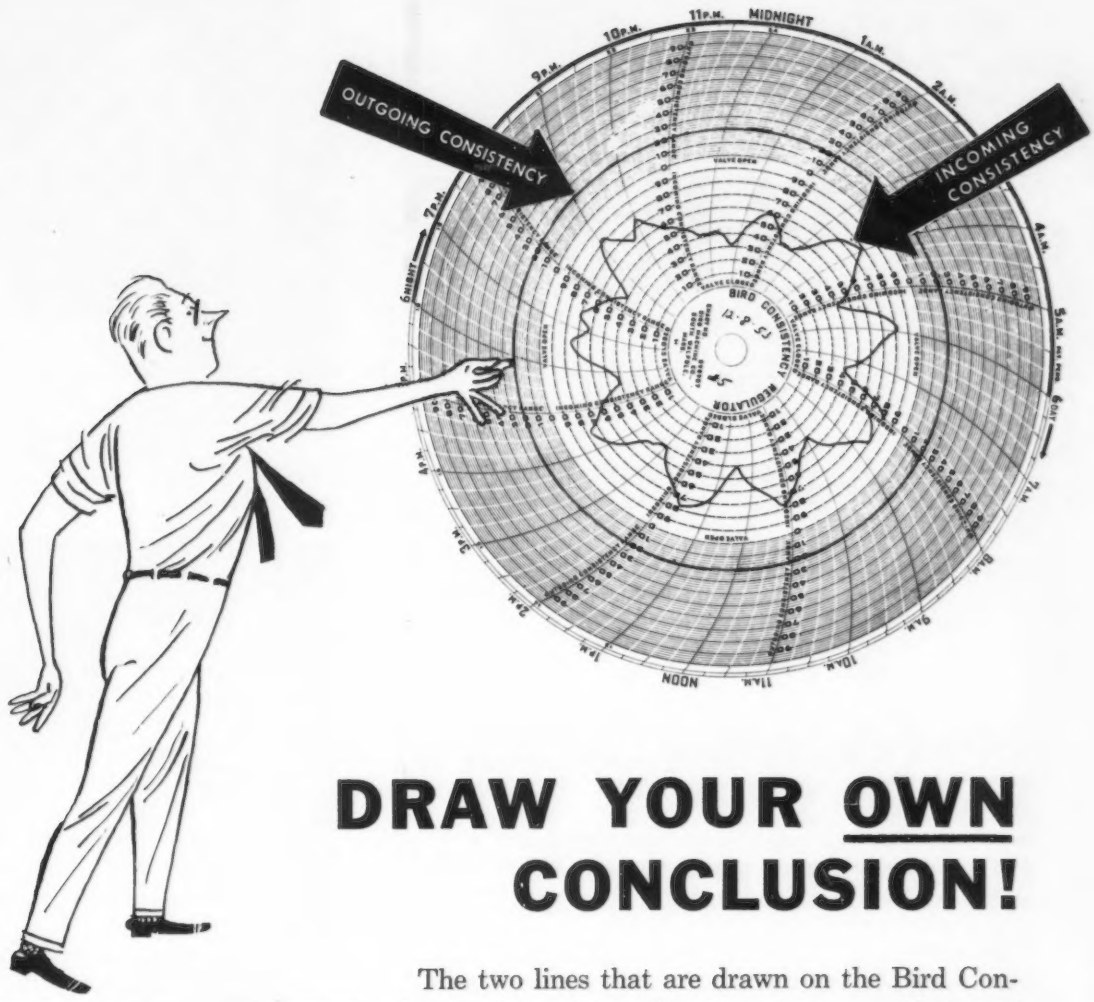
Mr. Solon will be responsible for market research and analysis in the development of the division's products. Designs and other patents also will be his responsibility.

Knowlton Names Garlough To Newly Created Post

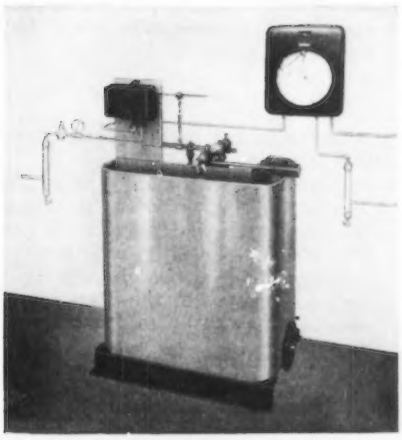
William G. Garlough has been promoted to the newly created position of manager of sales research, according to an announcement by David C. Knowlton, president of Knowlton Brothers, specialty paper manufacturers.

In his new position Mr. Garlough will be responsible for new market development, marketing research, and sales statistical records. According to the announcement, the new post was created in order to consolidate marketing activities, and to strengthen Knowlton Brothers' sales efforts.

A graduate of Clarkson College of Technology, where he received a bachelor's degree in electrical engineering, Mr. Garlough has been with Knowlton Brothers for 10 years and has served in a number of positions in the company's production department. Since 1951 he has been assistant purchasing agent in addition to other administrative duties con-



DRAW YOUR OWN CONCLUSION!



The two lines that are drawn on the Bird Consistency Regulator Chart present a perfect and permanent picture of the savings you make all along the line.

— After the paper machine stock chest to avoid rejects from underweight and loss from overweight — ahead of the Jordans — after plunger pumps — ahead of knotters — following washers — wherever precise, dependable consistency control means more profitable operation.

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And there's more than fast-growing timber here to keep your stockholders happy. Rivers of water course throughout this six-state area — wide, deep rivers that solve your major processing problem. Labor is plentiful, skilled or quickly trained. Taxes are favorable. Climate ideal. And people *want* you here!

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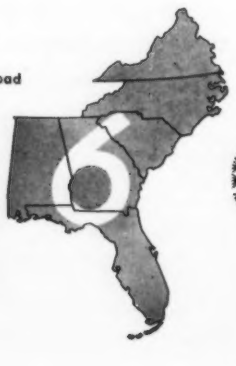
Atlantic Coast Line Railroad
Wilmington, N. C.



ATLANTIC COAST LINE RAILROAD

R. L. TYNDALL, assistant manager, purchasing department, Northwest Paper Co., Cloquet, Minn., winner of Dewey and Almy's "Name Latex C" contest.

MRS. JEAN L. DEAN, Tecnifax Corp., Holyoke, Mass. The name "Flotrol" she submitted in the "Name Latex C" contest will become the name for the new product line.

cerned with the plant's manufacturing activities.

John E. Cornaire has been appointed assistant purchasing agent. Mr. Cornaire is a graduate of Niagara University where he received a B.A. degree. He was previously employed by the Black-Clawson Co., Inc., paper mill machinery manufacturers.

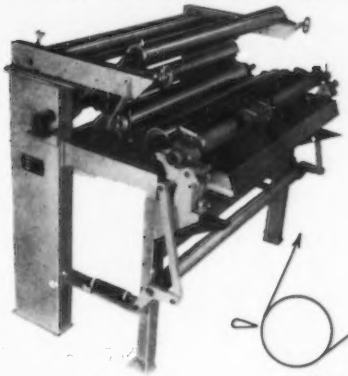
Scott Paper Announces Series of Promotions

Scott Paper Co. has announced a series of promotions. Affected are plant manager responsibilities for Gilbert L. Heath, Henry S. Godshall Jr., D. J. Doughie and Walter C. Miller. Mr. Heath and Mr. Godshall will assume posts in England and

Choose from the Complete Line of B *Clay Coating Machinery*

Warren-Dilts Air Doctor

Applied to on-the-machine operation on board and for off-machine on all grades of paper and board

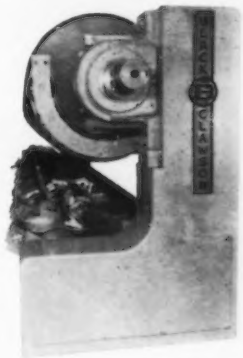


AIR DOCTOR

Flexiblade* Coater

Black-Clawson's new patented blade type coater delivers smooth coating to paper or board at full range of speeds

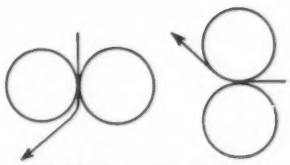
*Trademark



BLADE TYPE

Size Press

Compact, advanced design. Precision nip pressure control for uniform distribution of coating materials



HORIZONTAL OR VERTICAL

Magnetic Metering Bar Coater

For use in dryer section of board machines. Features newly patented magnetic method of holding rotating bar, and roll out feature for cleaning and maintenance

METERING BAR

Write for "Messenger No. 360" which outlines Black-Clawson's developments for machine coating.

The Black-Clawson Company
Dilts Division, Fulton, N. Y.

Convert with Confidence

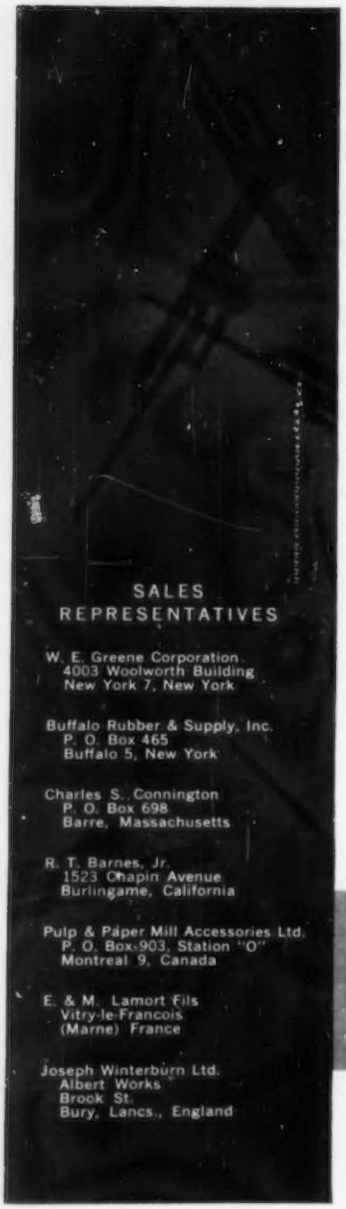
BLACK-CLAWSON

Mexico, respectively, while Mr. Miller and Mr. Doughie will succeed them in their plant managerial posts at the Oconto Falls and Marinette mills.

Mr. Heath has been named production manager in charge of manufacturing operations at the Bowater-Scott plants at Northfleet and Walthamstow, England. In his new capacity he will report directly to Neville Whitehurst, Bowater-Scott managing director, and will be responsible for the direction of papermaking and converting activities at those plants. He joined Scott in 1937 as a paper mill trainee. He has since served in a series of production posts including paper mill superintendent at Fort Edward, Chester plant production manager, and technical assistant in paper mill management. He has been plant manager at Oconto Falls since 1954.

Mr. Godshall, plant manager at Marinette, has been promoted to the newly-created position of manager at San Cristobal in Mexico City. In his 20 years of Scott service he has gained broad experience in engineering, manufacturing and woodlands operations. Following a series of engineering assignments he served in managerial posts at Sandusky, Empire and Fort Edward. In 1953 he was assigned to the West Coast Woodlands operation as administrative assistant to the vice president. He was named Marinette plant manager in 1956.

Mr. Doughie has been promoted to the post of Marinette plant manager. Currently staff manager of industrial engineering, he joined the Chester CR group in 1939. Following a series of assignments at Marinette and Fort Edward he was named plant manager at South Glens Falls, and most recently assumed his industrial engineering post in the staff group at Chester.



There's more to a Lodding Doctor than meets the eye

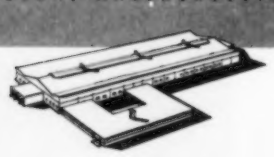
Few qualifications for manufacturing count more than experience. And when experience has been concentrated within a specialized line of endeavor it adds value to the product.

Lodding Doctors carry that extra value derived from experience — experience accumulated over thirty years of specialization in the manufacture of doctors, doctor blades, blade holders and their accessories. During this period, Lodding has built and installed doctors for every conceivable doctoring application, under all conditions and of every type and size, up to and including the Great Lakes Paper Company's 340 inch newsprint machine.

Installations of Lodding Doctors are found in nearly every paper mill in this country and in many mills abroad. Each was precision engineered and precision manufactured for the specific roll being doctored.

Doesn't it make sense to rely on specialized experience? Most mills have found that it does. Next time, get Lodding Doctors. Then you'll profit too.

LODDING
Engineering Corporation
AUBURN, MASSACHUSETTS



Stull of Hercules Powder Announces Retirement

Philip B. Stull will retire this month from Hercules Powder Co. upon completion of 33 years as an executive with the company. Mr. Stull resigned as a vice president, member of the board of directors, and of the executive committee of Hercules at the end of last year. Throughout 1959, he has been on special assignment.

He joined the Stamsocott Co., Hopewell, Va., in May 1920 as assistant purchasing agent. In 1923 he became associated with the Virginia Cellulose Co. as vice president, and was named president in 1926. In July of 1926 Hercules bought the Virginia Cellulose Co., and Mr. Stull remained as president until December 1928 when the company was merged with Hercules Powder Co. Mr. Stull was appointed general manager of the Virginia Cellulose department. The department, under his direction, subsequently became the world's largest producer of chemical cotton.

He was named to the Hercules board of directors in 1932. In May 1937 he became general manager of the Paper Makers Chemical department. Six years later, in September of 1943, he was elected vice president of Hercules Powder. He was elected a member of the executive committee in August 1945.

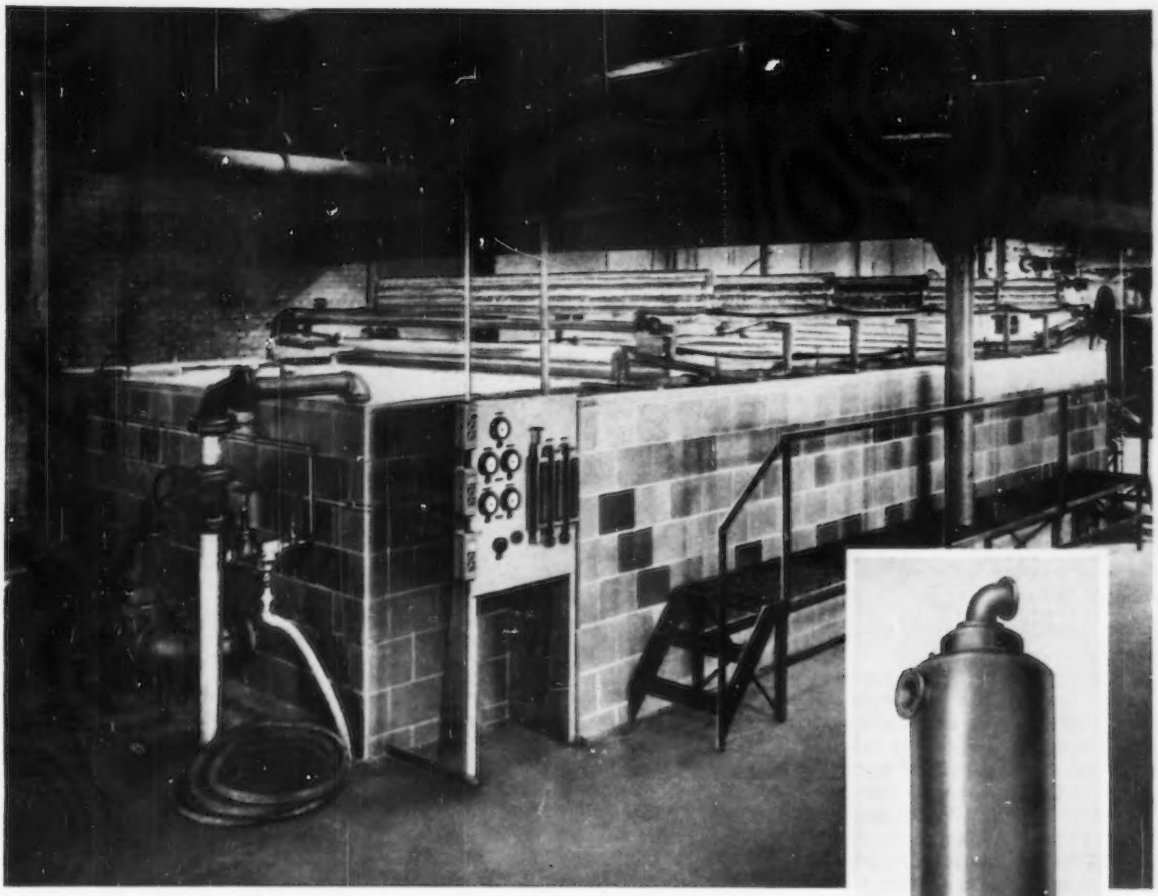
Diamond National Official Resigns

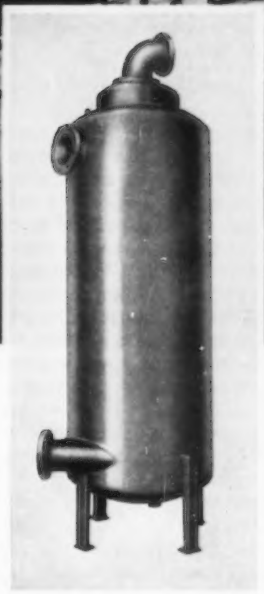
Colin Gardner III of Middletown and New York City has resigned as vice president of Diamond National Corp.

Robert G. Fairburn, chairman of the board, and William H. Walters, president, said the board accepted the resignation with regret.

NOW MADE BY JONES...

The Sveen-Pedersen Saveall with "Aqua-Air-Spray"*





"Aqua-Air-Spray"* Aeration Tank is automatic, simple, maintenance free. Drives more air into solution under pressure. Air-saturated white water is then released and distributed through either horizontal or vertical type Double Disk Inlet Valve*.

Recovers fiber and filler more efficiently than ever

Long recognized as the world's finest flotation saveall unit, Sveen-Pedersen now increases its lead even further. Through a field-proven, revolutionary "Aqua-Air-Spray"* system, more than twice as much air as previously possible is *dissolved* into the white water. Millions of tiny air bubbles are made available to float the fiber and filler out of the solution.

As a result, S-P Saveall — now made by Jones — offers these important advantages: Greater fiber and filler recovery — faster and in higher concentration • Better water clarification • Reduces — or even eliminates — flocculent chemical dosage • Requires up to 20% less pump horsepower • Minimizes maintenance.

For full details on the reclaiming of expensive fibers and fillers, and effective solutions to stream pollution problems, write to E. D. Jones Corporation, Pittsfield, Mass. Ask for bulletin F-10.

*Patented

Canadian Associates:
The Alexander Fleck Ltd.
75 Spencer Street, Ottawa

E. D. JONES CORP. member BELOIT group PITTSFIELD, MASS.

Jones

PULP MILL EQUIPMENT AND STOCK PREPARATION MACHINERY

Installation and Maintenance of Jordans

Read how to turn a hit-or-miss program of emergency maintenance into a top level program for maintaining one of the most important pieces of equipment in the paper mill.

Willard B. Hayden,
Service Engineer,
The Emerson Manufacturing Co. Division,
John W. Bolton & Sons, Inc.

The maintenance of jordans is often discussed, but in many cases little or no real action is taken. A jordan is one of the most important pieces of equipment in a paper mill, but outside of oil in the bearings and an occasional filling change, that's the end of the maintenance program.

There are several reasons for this lack of attention. Many times the location of jordans is an important factor. If they are crowded together in a poorly lighted area, or in a room with little or no ventilation, or general housekeeping is at low ebb, the maintenance department has very little interest other than to do what must be done.

I don't mean to infer that in those extreme conditions mentioned it is necessary to build a new, modern, air-conditioned beater and/or jordan room in order to institute a suitable maintenance program. Many times a thorough cleaning of the building and the equipment, plus a two-color paint job will do wonders to lift the morale of the mechanics. The importance of modern, well-located fluorescent lighting cannot be overlooked, and a simple ventilating system, too, is of great benefit.

A further important aid in the upkeep of refining equipment is to provide suitable equipment for the maintenance department. A case in point would be as follows. Each jordan should be provided with an overhead rail and trolleys for disassembly. Proper slings, cables, chains, hooks and chainfalls are necessary for easy disassembly. Also, with good tools and equipment, there is less chance of personal injury.

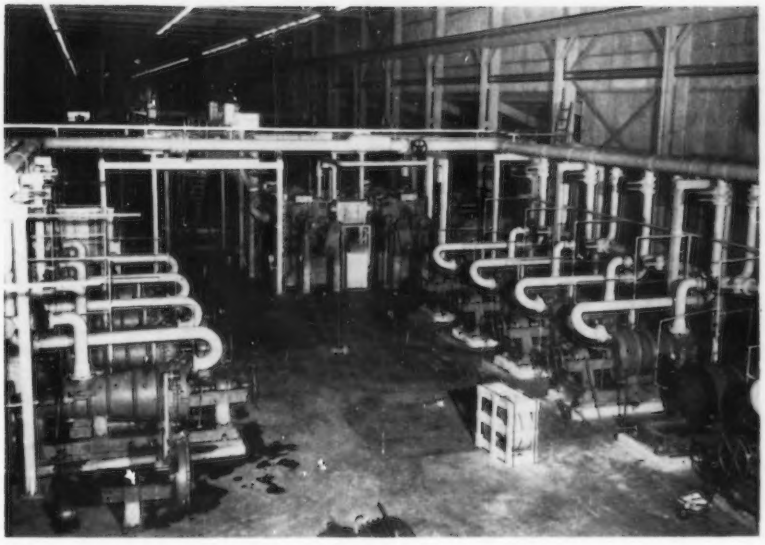
The important point is that a maintenance-of-jordans program cannot be the sole responsibility of the maintenance department. There has to be close cooperation between management and maintenance to carry out a successful program.

The writer had occasion recently to revisit, after an interval of five years, one of our older New England paper mills. The work which had been carried out by management in the beater room and the maintenance shops was positively amazing. Everything had been cleaned and painted, all excess junk had been removed, racks were installed for steel and pipe storage, machinery had been relocated, and some new machinery had been purchased; but the most astounding change was in the maintenance department itself, and the overall attitude of each individual mechanic. What now had been a hit-or-miss program of necessary and emergency maintenance is now a top level program of farsighted, preventive maintenance.

Installation and Alignment

The maintenance of jordans is not mysterious or difficult, and it need not be a nasty, dirty or disagreeable job to do. A good place to start is with a new installation. This could be several jordans or just a single unit. Location is all-important. Often the location can be selected, but there are many times when a new jordan is replacing an old one. In the latter case we should still make the best of an unfavorable location since long life, dependability, and easier maintenance can be provided for at this time.

If possible, allow working area all around the jordan. Space for removal of the plug must be provided. A good foundation is a must. The use of 12 inches to 18 inches of concrete is not uncommon. Setting of the jordan on the concrete base should be precise. The use of precision levels is recommended. Use a metal plate between the concrete and the leveling screws. Metal shims or packing should surround, or be very close to, the anchor bolts. This will prevent distortion of the jordan when the bolts are tightened. Before final grouting a check should be made on alignment between the jordan and motor shafts. Proper spacing between the ends of the shafts must be provided. The grout should be packed in under the



Battery of jordans at a modern paperboard mill.

jordan base and come up about one inch all around the outside of the base.

The motor shaft must be accurately aligned with the jordan shaft. It is usually easier to level the jordan first, and then align the motor to the jordan. In using an older motor or purchasing a new one, be sure that it has sufficient end thrust capacity.

The coupling halves are installed on their respective shafts, the motor half preferably being shrunk on by heating in oil. Alignment of the jordan and motor is now accomplished by using two indicators. and accurately aligning the coupling halves. One indicator is used to check coupling face, and the other one to check circumferential runout. Zero-zero readings mean perfect alignment, and with proper shimming the motor can be bolted down tight. After installation is completed and piping has been installed, it is good practice to remove inspection plates or doors at both ends of the jordan to check for possible tramp metal, such as nuts and bolts, which may have fallen in at some time during the installation. It is also wise to rotate the plug several revolutions by hand before startup to be sure that it is free and clear before the power is applied.

Grinding In

On many occasions before startup it is desirable to grind in the jordan with sand and water. This procedure applies to new jordans as well as an older machine which has just been refilled. In either case time must be allowed for soaking and swelling of the wood separators before any grinding is attempted. The jordan plug should be in contact with the shell filling during swelling time. This helps to prevent any undue inward swelling of the shell filling. A minimum of 24 hours is required for the more common woods such as maple or oak. A much longer period of time should be alloted for the dense, hard woods such as Betha-bara and Massaranduba. In an emergency the swelling time can be shortened by using hot water or introducing steam into the water-filled jordan.

The sand for grinding should be sharp and finely screened. A wire mesh similar in size to window screening is excellent for this purpose. A return pipeline from the jordan outlet to the inlet for recirculation is very helpful. The pipe can usually be fabricated from scrap material. Size is not too important. Any two-inch to three-inch pipe can be used. A drain should be provided at the bottom of the large head. This drain is left partly open during grinding to bleed off the mud. Water and sand are added more or less continuously according to the rate of bleed-off. The temperature rise in the jordan is also controlled by the rate of bleed-off.

Grinding time may be anywhere from 20 minutes up to two hours or longer, depending on time available, grinding rate, and type of paper being made. The grinding operation should not be forced or unduly hurried. In most cases grinding time is well spent and the results are a better fit between knives and less danger of filling wreck or collapse, as well as better stock treatment. Also, full horsepower will be applicable at once and production losses will be reduced.

After grinding is completed, the jordan should be thoroughly cleaned and washed out. New packing should be installed before the jordan is put into service. The packing glands should not be excessively tight. Lubrication should be checked, and water cooling for boxes and bearings should be provided, if used. Starting up a new jordan is no more difficult than an older jordan with a new filling.

Filling Change

A point to note in making a filling change is that after stripping the worn out plug and shell fillings, the jordan plug slots should be thoroughly cleaned and lubricated. Some manufacturers provide a special grease for slots with each new filling. The inside of the jordan must be cleaned of all scale and foreign material. In those stubborn cases where it is impossible to remove scale from the shell by ordinary means, a disk sander is very helpful. In refilling the plug use extreme care in fitting the woods. The jointer should be sharp and properly adjusted to maintain the original angles of the woods. The planing operation must be accurate as to size and taper for a good fit between the knives.

Before re-assembly, it is an excellent idea to check the jordan bearings for excess clearance, and make re-adjustments if necessary. Also, check the leadscrew, and remove any excess play or lost motion. The packing sleeves should be replaced if they are badly worn or grooved. Another important checkpoint is the bearing housings and ways. When these parts are excessively worn, the center line of the shaft drops below the center line of the shell, resulting in misalignment, uneven wear of the filling, difficulty with packing, and generally poor stock treatment.

Many times erratic or wild power fluctuations of a jordan can be traced to the above mechanical defects. Uneven wear patterns of the fillings such as ridges, steps and/or sawtoothing effects have been traced to poor maintenance, and neglect of obvious mechanical defects.

Preventive Measures

A program of preventive maintenance for jordans is the real answer to long life and continuous production. Many paper mills already have

excellent file and card index systems for the maintenance department; therefore, this article will not dwell on how to set up a filling or indexing system. Instead it would be a better idea to set forth important maintenance facts which may be incorporated into an existing maintenance program.

Based on one year's time a jordan maintenance program could be set forth as follows:

Once a year the jordan should be completely checked for levelness with a precision machinist's level. If the jordan is out of level in either direction, it should be corrected. This presents more or less of a major problem since most jordans are grouted in concrete, but if settling has occurred and the jordan is out of level, resulting in a twisted condition, then satisfactory performance will always be a problem. Check once a year the bearing housing and ways, and if badly worn they should be replaced. The packing box and gland may also need replacement at this time.

Every six months check the couplings. They should be tight on their respective shafts, and run as true as possible. An external cleaning is in order at this time. The internal gear type coupling should be drained, flushed, and refilled with new lubricant. Replace the felt seals or packing if needed at this time. A pin type coupling, if in good alignment, needs little attention other than keeping it clean and lubricating the pins and sleeves.

CAUTION—Do not over-lubricate! Bearings should be disassembled every six months for complete inspection, thorough cleaning, and re-adjustment. The adjustment or clearance in an anti-friction bearing depends on size, speed, horsepower applied, etc. This information is best obtained from the jordan or bearing manufacturer. This also applies to the lubrication of the bearings. In an emergency a good rule of thumb is to allow .006 inch to .012 inch for clearance, depending on size and load applied. Any standard brand of D.T.E. type oil in about No. 30 weight may be used.

Bearings which are grease lubricated must be disassembled for complete cleaning and removal of all old, hardened grease. Bearing cones, cups, cages and rollers should be cleaned with kerosene or other very light oil. Re-pack the bearing with the exact amount of grease needed. Any good E.P. anti-friction bearing grease may be used.

Every three or four months install new packing. It is much less expensive to replace packing than to replace the brass or stainless steel jordan shaft sleeves. After new packing is installed, the jordan should be allowed to run for some time with the packing gland nuts loose or just finger-tight. The packing gland nuts should be tightened only enough to prevent leaking.

Once a month inspect coupling belts and reverse jordan rotation. Reversing a jordan is helpful in keeping the tackle sharp, resulting in better cutting, more even knife wear, and increased filling life.

Every day an inspection should be made of the jordans under operating conditions, this inspection to cover lubrication and temperature of the bearings. Any high temperatures or unusual noises should be investigated immediately.

Continuous Cold Caustic Pulping Of West Coast Hardwoods

Sizable quantities of red alder, tanoak, bigleaf maple, and madrona pulpwood are available to the pulp mills of the Pacific Northwest. Although some of these woods are now used to a limited extent for pulping, considerable interest has been shown recently in expanding their use for this purpose.

The batch cold soda semichemical process has been demonstrated experimentally to be especially suitable for making high-yield pulp from red alder, which could be used in the production of corrugating board and printing papers. This investigation was made to determine the applicability of a continuous cold soda process in pulping these woods for use in corrugating board production. They were pulped by the continuous cold soda semichemical method under various conditions of temperature and chemical concentration. A batch of cold soda pulp was also prepared from red alder for comparison. Pulps made by both the batch and continuous methods were used in the production of corrugating board.

Condensed from Report No. 2162 of the same name published by the Forest Products Laboratory, U.S. Dept. of Agriculture, Madison, Wis.

Effect of Caustic Concentration

The results of these experiments revealed the following:

Though increasing the concentration of the caustic soda in a range of 10.2 to 58.5 grams per liter increased the strength of the continuously made red alder pulps and lowered the fiberizing energy, it also increased the chemical consumption and decreased the brightness. Raising the temperature from 49° to 57°C., increased the strength of the continuously made red alder pulp, but also decreased the brightness. The treating temperature had no appreciable effect on the amount of chemical or fiberizing energy consumed.

Increasing the caustic soda concentration from 25.1 to 58.8 grams per liter, increased the strength and brightness of the continuously made tanoak pulps, but also increased the chemical consumption. The same effects were also noted when the temperature was raised from 30° to 43°C.

Bigleaf Maple Strongest

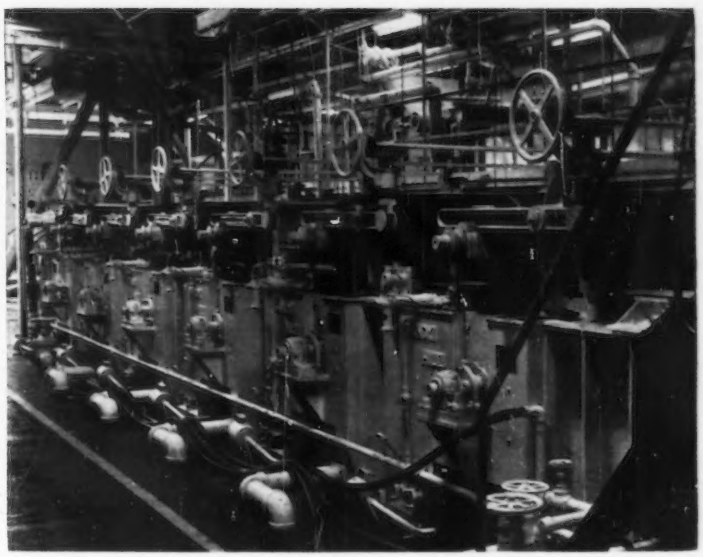
Bigleaf maple was easier to pulp and produced a much stronger pulp than the madrona. The maple wood however, used twice as much chemical when both woods were treated with a caustic soda solution having a concentration of 28.4 grams per liter and a temperature of 40°C. When the woods were treated at 55°C. with a caustic soda solution having a concentration of 52 grams per liter, the amount of chemical consumed was the same for both, but the bigleaf maple pulp was still much stronger than the madrona pulp.

Madrona Not Satisfactory

Corrugating boards made from red alder, tanoak, and bigleaf maple cold soda pulps exhibited very good ring compression and Concora values. Bigleaf maple pulp produced the best board, which had an average ring compression value of 56.9 pounds and a Concora value of 92.9 pounds. The madrona cold soda pulp proved unsatisfactory for producing corrugating board.

J. P. Lewis Mill Improves Specialty Board Machine

New cylinder vats were installed on No. 2 machine which makes stiffener board for use in packaging X-ray films. In the process special filtering methods are employed to prevent radioactive contamination.



Six cylinder machine produces food board and stiffener board for use in packaging X-ray films. Air and water system are carefully filtered.

As another phase in a continuing modernization program, six new Sandy Hill cylinder mould vats were recently installed on the No. 2 machine at the J. P. Lewis Co. mill at Beaver Falls, N. Y. The result has been better quality control and reduced maintenance problems. The new vats have cast iron ends with cypress sides and circles. The first and last vats in the line are equipped with distributor rolls to produce better fiber dispersion on the top and bottom liner. Each vat is provided with a stainless steel flow spreader with a circular entrance and a discharge slot the full width of the machine. A cross-over provides ample evacuation from both ends of the mould. Excess white water flows out of a separate outlet located on the tending side of the vat. This also controls level inside the mould. A quick acting dump valve is located in the bottom of all vats.

The No. 2 machine room is entirely sealed and the air and water supply are filtered to protect the product, used as stiffener board between X-ray films and as food board, from contamination by radio-active fallout.

Pioneering Firm

In speaking of the new vat installation, J. Edmund Becker, production manager, pointed out that completion of this project marked neither the beginning nor the ending, but was rather one phase of a continuing modernization and expansion program. Since the first paper machine was installed at J. P. Lewis Co. in 1889 it has been company policy to keep the mill in top operating condition. It serves a critical market for special and diversified boards.

A number of important "Firsts" have come from the Beaver Falls mill, according to the J. P. Lewis Co. In 1903 somebody at Beaver Falls sealed up a room with mat boards. Everyone who saw it liked it and wanted a room just like it. The result was beaver board, and the giant wallboard industry was born. Also, the first chemically treated board for paper match stems originated at this mill and the book match industry came into being. Neither of these products is manufactured today by the J. P. Lewis Co. "They've grown too big," says a company spokesman, who points out that J. P. Lewis will continue to devote its major efforts toward pioneering and producing new lines.

Radioactivity a Problem

To get an idea of their pioneering activities, one might try to measure the scope of the current program under research in No. 2 machine room. There, in a program aimed at producing a product completely free of contamination from radioactive fallout, they are striving to solve a problem that never existed before the age of the atom splitter.

To the manufacturer of food boards, photographic papers and films the problem of radio-activity from atomic fallout is a very real menace. In the packaging of X-ray film a critical problem has arisen. If contaminated, the stiffener board used between the X-ray films can render the films useless. The radio-

active content of this paperboard must be as close to zero as possible. For the past year the J. P. Lewis Co., in collaboration with the film manufacturer, has directed a research program into the three fields of contamination source: water, air and raw material.

Water contamination is removed by an alum coagulation and filtration treatment. Air contamination in the No. 2 paper machine room is removed by a special air filtration system, designed to remove the extremely small fallout particles. Procurement of uncontaminated raw materials, together with prevention of contamination during processing, is the remaining problem, and the most serious one at the present time.

A separate laboratory has been equipped, in the machine room, with special sampling filters, a Geiger counter, and dark room for X-ray film processing. Considerable progress has been made toward production of board with very low radioactive content. Present production shows approximately 90 per cent removal of contamination which existed a year ago.

The process has been so successful that it seems quite possible that the very filtering system which has been developed to screen the radioactive fallout from the three sources may prove to be the most important part of this newest project.

Company Dates Back to 1881

The J. P. Lewis Co., still managed by members of the family who founded it, dates back to 1881 when the first James P. Lewis started up a pulp mill in Beaver Falls. In 1887 he built another pulp mill and installed in it new hydraulic grinders. His was the second mill in the country to install these revolutionary new pulp grinders. These were International wood pulp grinders developed and built by The Sandy Hill Iron and Brass Works.

In 1889 the company installed its first paper machine to convert its own pulp. That paper machine and most all items of papermaking equipment installed in the J. P. Lewis mill since that time have been built by Sandy Hill, according to a company spokesman. The company has grown from a small wooden one-machine mill in 1889, so that today it has three up-to-date paper machines producing boards for milk bottle caps, paper matches, boxes, paper cans and tubes, paper plates, menu cards, theatre tickets, index cards, tablet covers, calendar mounts, photo film paper, pill and powder boxes and many others.

Pulpwood Price Trends in the Southeast

Pulpwood prices in the Southeast remain stable at record levels. The latest (through 1958) survey of pulpwood prices in Florida, Georgia, North and South Carolina, and Virginia revealed only slight changes from the previous two years, thus checking an upward price trend that has been interrupted only twice before in the past 20 years. These interruptions coincided with the recessions of 1949, 1954, and 1957. The only year in which pine prices actually declined was 1949, and they recovered the following year.

Rough pine pulpwood which sold for $3.60 in 1938, brought $11.70 in 1948 and $15.50 in 1958. Hardwood prices have advanced from $11.05 to $13.45 in the last decade. Although the hardwood price trend has been generally upward, it has advanced at a slower rate than that for pine. The term "rough pulpwood" refers to wood with bark—as contrasted with peeled wood, sawmill chips, veneer cores, or other wood residues used for pulp.

These trends and the others shown in the table are based on 70 per cent of all the rough pulpwood currently purchased in the 5-state area. Four price series are shown—one for wood f.o.b. railroad cars, one for wood purchased at pulpwood yards, one for wood trucked to pulpmills, and one for all-wood. Although mechanized pulpwood yards first appeared in the Southeast about 1950, prices at these yards are not available prior to 1957. The all-wood prices are weighted averages of all rough pulpwood purchased. Therefore, they are applicable to total regional volumes of production or consumption, as they reflect changes in the proportion of rail, yard, and truck wood purchased, as well as changes in prices.

Vernon L. Robinson, Division of Forest Economics Research, Southeastern Forest Experiment Station, Asheville, N. C.

AVERAGE PRICE OF ROUGH PULPWOOD IN THE SOUTHEAST, BY YEAR[1]

	Pine				Hardwood			
Year	Rail wood[2]	Yard wood[3]	Truck wood[4]	All-wood[5]	Rail wood[2]	Yard wood[3]	Truck wood[4]	All-wood[5]
1938	3.55	—	3.85	3.60	—	—	—	—
1939	3.75	—	4.40	3.90	—	—	—	—
1940	4.00	—	4.60	4.15	—	—	—	—
1941	4.50	—	5.00	4.60	—	—	—	—
1942	5.90	—	6.65	6.00	—	—	—	—
1943	7.15	—	8.00	7.25	—	—	—	—
1944	8.15	—	8.70	8.20	—	—	—	—
1945	8.35	—	9.15	8.45	8.10	—	8.55	8.10
1946	9.90	—	10.75	10.10	9.50	—	10.55	9.70
1947	10.80	—	11.70	10.95	9.70	—	10.55	9.80
1948	11.65	—	12.30	11.70	11.00	—	11.25	11.05
1949	10.85	—	11.80	11.00	10.75	—	11.25	10.80
1950	11.85	—	12.55	11.90	10.70	—	11.50	11.00
1951	13.65	—	14.70	13.85	12.40	—	13.15	12.75
1952	13.70	—	14.70	13.90	12.40	—	13.15	12.80
1953	13.70	—	14.70	13.90	12.35	—	13.15	12.75
1954	13.75	—	14.75	13.95	12.30	—	13.15	12.75
1955	14.15	—	15.05	14.35	12.50	—	13.45	13.05
1956	15.15	—	16.45	15.45	12.90	—	13.90	13.50
1957	15.20	15.40	16.35	15.50	12.65	12.70	13.75	13.35
1958	15.20	15.40	16.10	15.50	12.45	12.50	13.85	13.45

[1] Per cord of 128 cubic feet of 5-foot wood with bark. Includes dealers' allowances in cases where they are paid. Prices are rounded to the nearest 5 cents.
[2] F.o.b. railroad car.
[3] Delivered to mechanized pulpwood yard.
[4] Delivered to pulpmill.
[5] Weighted average of all wood loaded on railroad cars, trucked to pulpwood yards, and delivered to pulpmills.

New Work on Tensions Developed In Removing Wet Paper Sheets from Rolls

Most important point is further evidence on significance of effect of changes in the angle of take-off from couch and press rolls.

Recent developments in investigations of the forces involved in removing the wet paper sheet from couch and presses were revealed at the Fundamental Research Conference held this fall in Appleton, Wis., by B. Radvan and G. O'Blenes of the Wiggins Teape Group Research, Beaconsfield, England, and supplemented by slides shown in the discussion on behalf of Jasper Mardon and G. Bourassa of Anglo Paper Products by Dr. O. Forgacs of the Pulp and Paper Research Institute of Canada.

It has been shown (1) that the basic equation for separation at the couch is:—

$$S = \frac{W}{1\text{-}\mathrm{Cos}\,\phi} + mV^2$$

where ϕ is the angle of takeoff
W is the work of separation
m is the mass of the web per unit area
V is the velocity of the web
S is the tension in the web

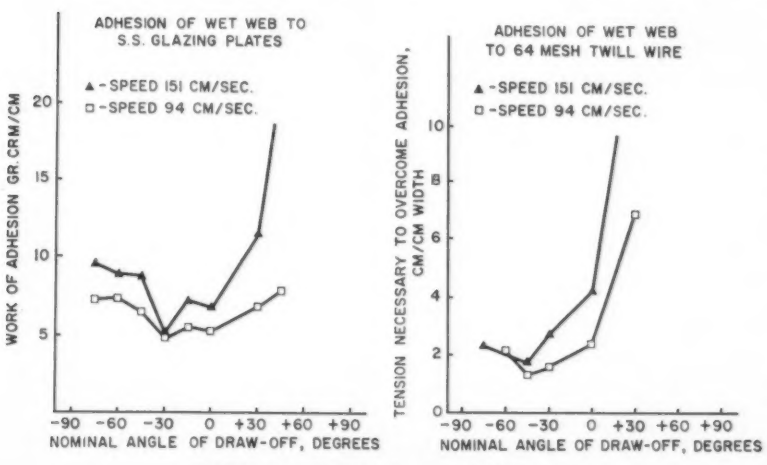
WHAT IS THE PRACTICAL ASPECT OF THIS?

The old theory has been that when paper is peeled from a surface (for example a couch or press roll) a change in the take-off angle would have only a relatively small effect on the tension in the sheet.

Mardon's tension equation has shown that the dependence of tension on angle is very much greater than ever previously realized and thus for machines at speeds of 1200 f.p.m. and below very significant advantages in reduction of tension and, therefore, of breaks can be expected if this angle is increased. Not only is the way pointed to making a significant advance but the work of all the authors quoted enables it to be put on a quantitative basis. In the second part of their paper Radvan and O'Blenes have demonstrated that the relationship between the draw off angle and tension and breaks both in the laboratory and on the machine is real and consequently have provided information that should encourage extensive experimentation and should enable the better running of slower machines.

This new line of research was started by the paper produced by Jasper Mardon's research group in 1957, and published in 1958 (1), of which group George O'Blenes was a member.

The first paper published on this important subject was that of Gunnar Gavelin (4). He obtained the general form of the tension equation and pointed out the independence of draw and speed. Subsequently, a paper relating the basic theory to the machine was published by Howe et al (2). Following Mr. O'Blenes moving to Wiggins Teape Group in 1958, research in this new field was started on the other side of the Atlantic, while at the same time it was continued by the original group in Canada.



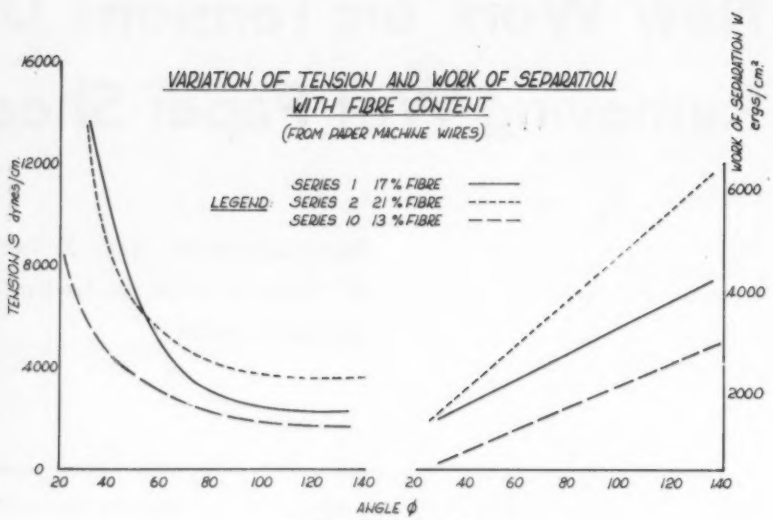
GRAPHS 3 and 5—(Radvan and O'Blenes).

Radvan and O'Blenes Work

Radvan and O'Blenes gave a description of the apparatus they had constructed for verifying if Mardon's tension equation given above, did describe the behaviour of wet paper removed from solid surfaces. Their apparatus was constructed from a large wheel and depended on the principle of the pendulum.

Their graphs 3 and 5 reproduced here are typical of the results of the first part of their paper. Measurements showed that the tension necessary to overcome the adhesion had a minimum where the angle of draw off θ (the complement of the take off angle) was slightly negative (or ϕ

SLIDE 1—(Mardon, etc.).


VARIATION OF TENSION AND WORK OF SEPARATION WITH FIBRE CONTENT
(FROM PAPER MACHINE WIRES)
LEGEND
SERIES 1 17% FIBRE
SERIES 2 21% FIBRE
SERIES 10 13% FIBRE
TENSION S dynes/cm
WORK OF SEPARATION W ergs/cm²
ANGLE φ

SLIDE 2—(Mardon, etc.).

the take-off angle was greater than 90).

They found that the tension equation did give a good description of the change of force necessary to pull off the paper with change in angle but worked at speeds low enough to allow the second speed dependent term of the right hand side of the equation to be neglected. They also found that the work of separation increases with increasing speed of separation at positive angles of draw off θ but was independent of it at negative angles.

It is understood that the discussion on this important paper presented for Mardon et al will not be published and the editor of the PAPER TRADE JOURNAL, realizing the importance of the new work presented in the discussion, involving as it does more experimental work than in the corresponding part of the paper and including results for stripping from wires, granite, rubber, and metal surfaces has reproduced this in full below.

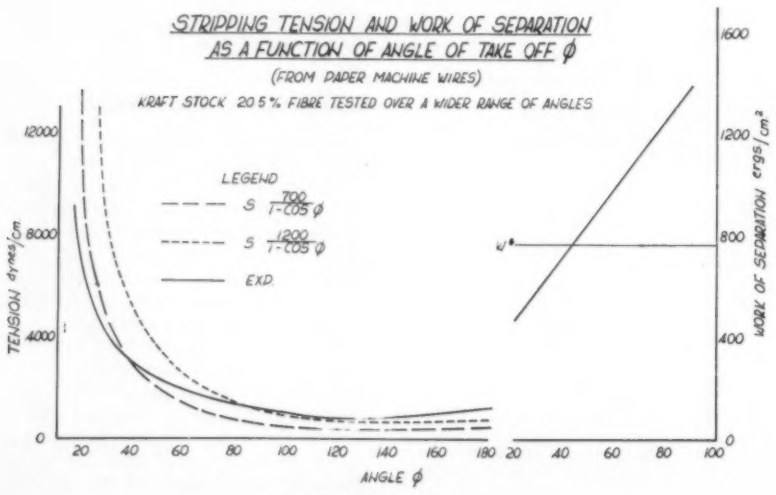
More Work in Canada

In making his presentation Dr. Forgacs said:—

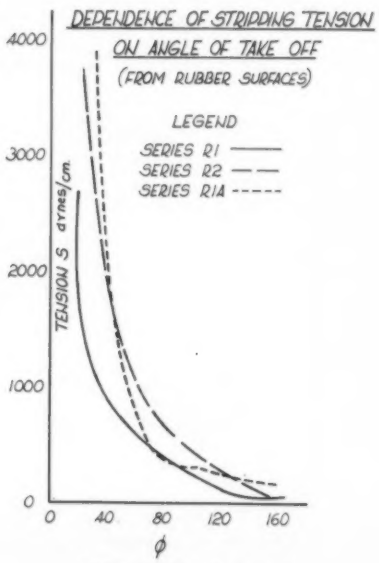
"I have been asked on behalf of Jasper Mardon and Guy Bourassa of Anglo Paper Products to show a few slides which are of direct interest in connection with the paper on adhesion presented by Mr. Radvan. I must point out that I have not been associated with this work myself, and deserve neither credit nor criticism for it.

The first term of the equation has been investigated experimentally by the use of the apparatus shown in Slide 1. The rate of travel of the trolley is such that the V in the second term is sufficiently small to give a negligible value of mV^2.

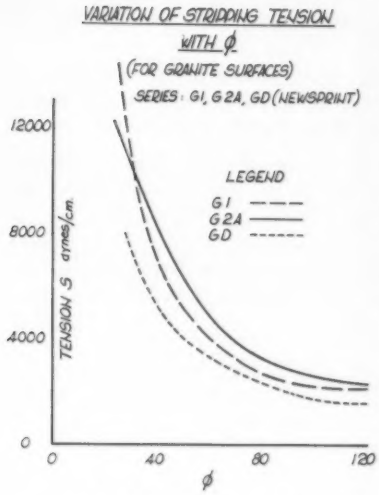
Slide 2 shows how W, the work of separation for removing a wet sheet from a wire, increases as the fiber content of the sheet increase. It is clear that a negative angle of draw-off enables a lower tension to be used


STRIPPING TENSION AND WORK OF SEPARATION AS A FUNCTION OF ANGLE OF TAKE OFF φ
(FROM PAPER MACHINE WIRES)
KRAFT STOCK 20.5% FIBRE TESTED OVER A WIDER RANGE OF ANGLES
LEGEND
S 700/1-COS φ
S 1200/1-COS φ
EXP.
TENSION dynes/cm
WORK OF SEPARATION ergs/cm²
ANGLE φ

SLIDE 3—(Mardon, etc.).



SLIDE 4—(Mardon, etc.).



SLIDE 5—(Mardon, etc.).

in removing the paper from the couch.

Slide 3 shows the correspondence between the experimental variation of tension change with take-off angle and the theoretical curve.

Slide 4 shows similar curves for the separation of newsprint sheet from different types of rubber surfaces.

Slide 5 gives the same curves for the removal of newsprint sheets from granite surfaces for three different types of granite.

Studies such as those indicated by slides 4 and 5 are of great importance for the improvement of the press sections of the paper machine.

Slide 6 shows the variation in stripping tension with angle caused by different metal surfaces. It is seen how very high these tensions can be. Studies of this kind are of significance in Yankee dryer operation.

Working under the general direction of Mardon, Howe, Gregory and Lepine[2] have applied the basic stripping equation to the paper machine at the couch and have found a reasonable correspondence between tensions calculated from the complete equation and those calculated from the load extension curves of wet paper and the draw as measured on the machine.

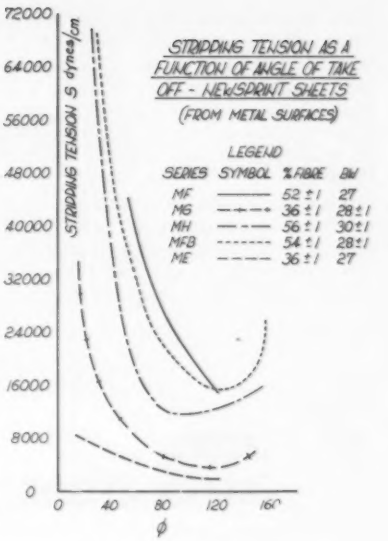
In a further series of experiments to check on the validity of the second term in the tension equation, Mardon and Bourassa have used the apparatus shown in Slide 7.

Here a pendulum is dropped to obtain the velocity and the paper strip is removed from the surface by a length of line that is taut when the pendulum is at the bottom of its swing.

The actual load as the paper is removed is measured by the load cell mounted on the pendulum and is recorded on an oscilloscope and photographed.

This apparatur has been extensively used and one typical set of results is shown on Slide 8.

It was found in using this equipment that the exact angle at which the paper came off had to be known and this was obtained by photographing with the Fastax and Bell and Howell cameras. It was also vital that a correction for the clip weight was made and that the energy absorption of the string at the moment of separation was taken into account. (End of Forgacs presentation).



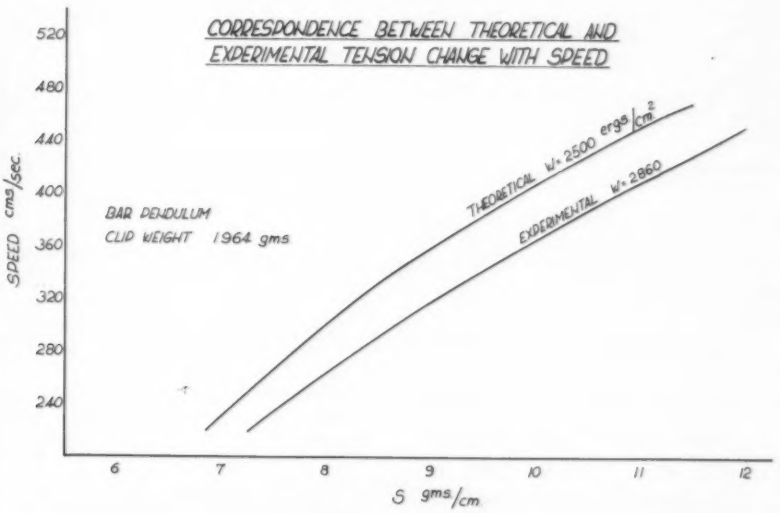
SLIDE 6—(Mardon, etc.).

Actual results of tension versus stripping angle similiar to those of Radvan and O'Blenes and those now presented, were presented at a lecture in Leningrad in May of this year[3].

Spreading of Tears

In the second part of their paper, Radvan and O'Blenes gave an account of the starting of laboratory tears in wet webs by means of standard adhesive spots and described the rate of spreading of tears. Tears start more easily at positive angles of draw off (θ) than at negative angles. At negative angles they found that the wet web tends to skin rather

SLIDE 7—(Mardon, etc.).



SLIDE 8—(Mardon, etc.).

than to tear through. As the angle of draw off (θ) decreases the tears if started, spread more slowly and may even become self healing. A self healing break was shown to be possible by two tears running together at moderate values of the angle of draw off.

These findings were confimed by machine experiments at low speed and the experiments documented at the meeting by an exciting film.

The editor has learned that although the Canadian group have published nothing similar to the second part of the work of Radvan and O'Blenes they have worked extensively in this field and publications of their results are awaited with interest by those concerned with the science of machine operation.

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1. J. Mardon, A. B. Truman, G. O'Blenes and K. Meadley. **Pulp and Paper Mag. Canada** 59.9.135 (1958).
2. B. I. Howe, R. G. Lepine and I. R. A. Gregory. **Pulp and Paper Mag. Canada** 60.4.99 (1959).
3. Lecture (in press Bumazh. Prom.) delivered by J. Mardon in Leningrad May 4, 1959.
4. Gavelin, G. Case of the Open Draw. **Svensk Papperstidn.** 61, No. 9: 282-6 (May 1958.)

PJT NEW LITERATURE

Multi-Pointer Gauge Unit

Describes and illustrates these units which are used for pressure and level measurements and pneumatic transmisting or receiving. Also provides an actual size drawing of 7-inch indicating scale. Product Specification M42-2. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

General Purpose Control Catalog

Contains information on complete line of control devices. Horsepower selection charts are listed for motors from one-fourth through 200 h.p., providing quick selection of starters, etc. necessary for control of these motors. General Electric Co., Schenectady 5, N. Y.

Non-Toxic Adhesives

Lists non-toxic adhesives for food packaging anplications. This includes a series of resin based emulsion glues specially designed for convolute and spiral-wound food containers. Dept. H, Borden Chemical Co., 350 Madison Ave., New York 17, N. Y.

Signode Wall Check Charts

Provide clear and illustrated information on carloading procedures for wall anchored, free floating and controlled floating loads. Signode Strapping Co., 2600 North Western Ave., Chicago 47, Ill.

Patents & Inventions

This contains information which will help the inventor. It discusses the importance of patents; the independent inventor; summary of basic steps; marketing and developing the invention; answers to questions frequently asked; addresses of U. S. Dept. of Commerce Field Offices and addresses of Small Business Administration Field Offices. Price 15c. Available Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Coating with Nacreous Pigments

Includes section on choice of coating vehicles, techniques, undercoats and colors, spray coating techniques and special color effects which provide completely detailed data for using both natural and synthetic pearl pigments as coating materials. Brochure. Mearl Corp., 41 East 42nd St., New York 17, N. Y.

"AquaLine" Pumps

Includes complete product descriptions, dimensions, application data and performance characteristics of an augmented line of building trades pumps. These are available in both packed and sealed types. Bulletin B-2100. Peerless Pump Div., Food Machinery & Chemical Corp., 2005 Northwestern Ave., Indianapolis, Ind.

Basis Weight Scales

Illustrates and describes various quadrant basis weight scales which are of the pendulum type with jewel or hardest steel bearings. Data Sheet. Testing Machines, Inc., 123 W. 64th St., New York 23, N. Y.

Buchanan Electrical Products

Catalog 76 covers manufacturing and production of terminal blocks, solderless connectors, cable and conduit fittings. Catalog 85 covers contracting and maintenance of solderless connectors, terminal blocks and cable and conduit fittings. Buchanan Electrical Products Corp., Hillside, N. J.

Servo-Gauge Metering Pump

Covers operating principles of this pump and its controller which has a pump-plunger-positioning accuracy within 0.002 inch., repeatedly. Also includes five typical applications with suggestions for similar uses. Bulletin P-21. Associated Control Equipment, Inc., P. O. Box 136, Coraopolis, Pa.

Reprints of the Paper Trade Journal 1959 Year-End Index will be available free of charge on request.

Bibliography on Tall Oil Published

Covering subjects from abietic acid to zinc treatment, a new complete Tall Oil Bibliography discusses the preparation, properties, reactions and applications of tall oil and its derivatives. The Bibliography is published by The Institute of Paper Chemistry, under the sponsorship of the Tall Oil Products Division of the Pulp Chemicals Association.

Over 1,600 articles, reviews, and patents are included in the Bibliography covering the literature to the end of 1957.

The Bibliography is indexed by subjects, authors, and patents. Almost 1000 patents are indexed from the United States, Europe and Russia.

Totalling 450 pages, this is the third edition of a bibliographical series initiated by the late Dr. Clarence J. West. It has been prepared under the direction of Jack Weiner of The Institute of Paper Chemistry. Copies have been supplied to members of The Institute of Paper Chemistry and to the Pulp Chemicals Association. Non-members may purchase copies from The Institute or request copies, on company letterheads, from the Pulp Chemicals Association, 60 East 42nd Street, New York 17, N. Y.

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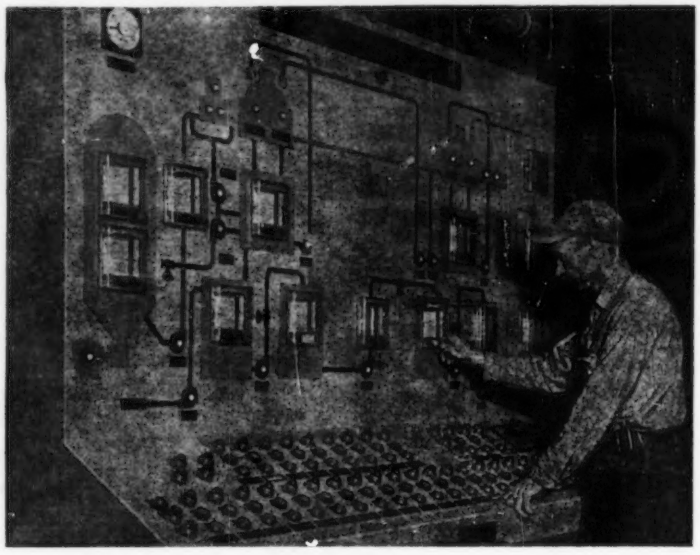

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With closely-knit, complete mill instrumentation, this revolutionary new pulp mill at Missoula, Montana, produces 250 tons of bleachable-grade kraft pulp per day, with a surprisingly small work force.

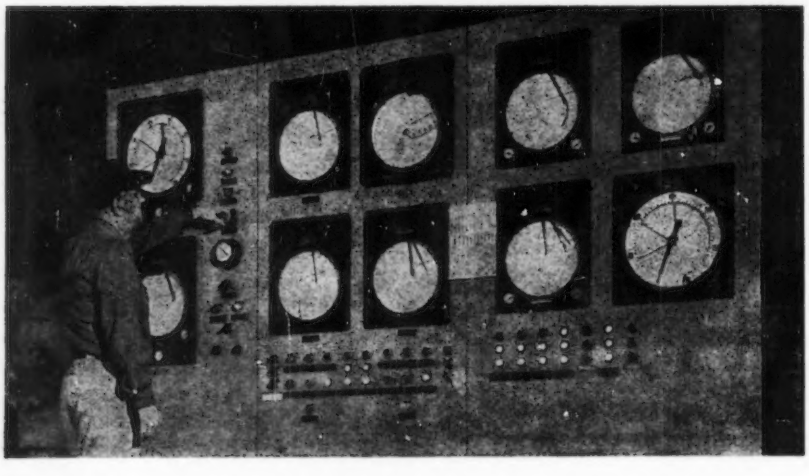
The brain child of Nels H. Sandberg, president of the Montana company, the entire mill features many processing innovations for efficient, profitable operation through automatic control.

This is another example of how mill instrumentation, complete from concept to startup, pays daily dividends. Your nearby Honeywell field engineer can show you how to gain the advantages of instrumentation in your own mill. Call him today . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL, Wayne and Windrim Avenues, Philadelphia 44, Pa.

Honeywell

H HONEYWELL *First in Control*



HONEYWELL RECORDERS AND CONTROLLERS operate the digesters. The mill plans to produce 500 tons of pulp a day in 1960.

PJT NEWS OF CONVERTERS

Group Attends Seminar at Langston Plant

Board and adhesive suppliers attended a week-long seminar at the plant of the Samuel M. Langston Co., Camden, N. J. The group attending the discussions of corrugating operations and quality control included representatives of 10 companies: from the Mead Corp., Chillicothe, Ohio, Leonard Timmer and Bert Jones; from West Virginia Pulp & Paper Corp., New York City, Wallace N. Ackerman, Len Sheffield, Thomas Cadden and Thomas L. McLane; from Owens Illinois, Mill Division, Toledo, Ohio, Merritt A. Gates and C. P. Spring; from Green Bay Paper & Pulp Co., Green Bay, Wis., Richard Lenss; from Corn Products Sales Co., Atlanta, Ga., J. R. Belche, and from New Orleans, Richard Kraus; from A. E. Staley Manufacturing Co., Decatur, Ill., A. B. O'Neill; from International Paper Co., New York City, Paul Schulz, and from Chicago, Burton Klabunde; from Sunoco Products Co., Hartsville, S.C., George Dickinson and B. R. Whaley; from St. Regis Paper Co., New York City, Don Sensenbach, and from Jacksonville, Fla., J. M. Victor; and from National Starch Products Co., Toronto, Can., Walter Parry.

Dewey and Almy Names Three To New Posts

Three appointments in the Polyfibron division of the Dewey and Almy Chemical Division, W. R. Grace & Co., have been announced.

Rodney M. Vining, former Dewey and Almy treasurer and controller, has been appointed general manager of The Vellumoid Co., Worcester, Mass., a subsidiary of W. R. Grace & Co. Thomas G. O'Neil continues as Vellumoid sales manager. Vellumoid is a leading U.S. manufacturer of fiber gaskets.

Philip A. Lamb, general manager of Dewey and Almy's "Endura" products plant at Quakertown, Pa., also assumes new responsibilities for sales of Dewey and Almy's "Darex" shoe products.

Eugene N. Sidoroff, Endura sales manager, becomes sales manager for Darex shoe products as well, and sales headquarters for the shoe products will be moved to Quakertown.

Endura manufactures latex-impregnated fiber backings for pressure sensitive tape and similar products, a line which closely complements Dewey and Almy's impregnated fiber shoe insoles, welting, and artificial leather coating base. The Darex products are generally thicker than 10 point (one hundredth of an inch), while the Endura line ranges in thicknesses up to 10 point.

DISCUSSING SHOE INSOLE with Russell L. Haden, Jr., left, general manager, of Polyfibron (polymers-fibers) Division, Dewey and Almy Chemical Division, W. R. Grace & Co., are Philip A. Lamb, center, newly appointed general manager for Dewey and Almy's "Endura" and "Darex" impregnated fiber products, and Eugene N. Sidoroff, sales manager for both product lines.

Lassiter Acquires New Division

Lassiter Corp., New York and North Carolina, nas announced the acquisition of the Print-A-Tube Co., Paterson, N. J. Henceforth, it will be known as Print-A-Tube Co., a division of Lassiter Corp.

The new division is engaged in the production of extrusion-coated materials — principally printed cellophane, Mylar, foil and papers. Print-A-Tube also manufactures a machine designed especially for skin packaging as well as supplying the film used in this skin packaging process.

Laminated-film production capacity of Lassiter Corp. is tripled by the addition of the new plant.

Weyerhaeuser Names Riggs V-P, Sales, Eastern Region

David R. Riggs will become vice president, sales, Eastern region of Weyerhaeuser Co.'s shipping container division on December 15, according to Charles H. Carpenter, division vice president, shipping container division, Eastern region.

Mr. Riggs has been employed by Container Corp. of America for 24 years. He began as a salesman and rose to general manager of Container's Cincinnati plant. In 1954 he was appointed vice president, Eastern division. With headquarters in Camden, N. J., Mr. Riggs will supervise the sales of shipping container plants in the Eastern Region.

PJT NEWS OF SUPPLIERS

Sidney Herwod

Paul Whitmore

Simonds-Worden-White Co. Dayton, Ohio, announces the appointments of Sidney Herwod and Paul Whitmore as sales representatives. Both men will be responsible for sales of the complete line of SWW Co. machine knife products.

Mr. Herwod, who resides at Woodner Hotel, 3636 16th St., N.W., Washington, D. C., will represent the company in the District of Columbia, Maryland, Virginia and the Eastern part of West Virginia.

Mr. Whitmore will be responsible for machine knife sales in North and South Carolina, Eastern Tennessee and North Eastern Georgia. He resides at 7215 Halifax Place, Springfield, Va.

Founded in 1873, Simonds Worden White Co., 1101 Negley Place, Dayton, Ohio, manufactures grinding wheels and machine knives for metalworking, wood, paper and allied industries.

Red-Ray Mfg. Co., Inc., Cliffside Park, N. J., manufacturer of infrared gas burners, announces that James L. Belknap has joined the Red-Ray engineering staff.

Mr. Belknap is experienced in the design and application of gas burners, and was formerly associated with the Eclipse Fuel Engineering Co. He attended The University of Illinois and Columbia University.

B-I-F Industries, Inc., of Providence, R. I., manufacturer of meters, feeders, controls for the positive control of materials in motion, announces the formation of Eastern, Central and Western regional operations for its U. S. and Canadian field sales organization.

The Eastern region, with headquarters in New York City, is under the direction of Douglass Taber; the Central region is headed by Paul A. Coffman, Jr., who will make his headquarters in Chicago; and the Western region is headed by Edward F. Morey, Jr., with offices in Dallas.

Joseph Cavedon Chemical Co., Inc., Woonsocket, R. I., has named Norman Alper vice-president in charge of its paper chemical division. Announcement of the election was made by Ralph Cavedon, president of the company.

Norman Alper

T. C. Jones

Nalco Chemical Co., Chicago, has elected Thomas C. Jones president effective January 1.

Joseph A. Holmes, now president, will become vice chairman of the board of directors, a position presently vacant.

Mr. Jones has been a member of the Nalco board of directors since 1953 and a member of the company's executive committee since 1954. An executive of the Aluminum Co. of America, with which he has been associated for over 40 years, Mr. Jones is manager of its Chicago district.

The Green Bay Pulp and Paper Co. has announced that it will use AST for chemical and heat recovery from its neutral sulphite semi-chemical (NSSC) pulpmill. The plant has been designed by Blaw-Knox, and at present there is a vigorous search for the best corrosion-resistant material of construction for the ultimate plant reactors.

The Black-Clawson Co. has formed a sales and technical service subsidiary to represent its products to the Australian and New Zealand paper industry. The subsidiary will be known as Black-Clawson (ANZ) Pty., Ltd.

Norman T. Jelbert is appointed managing director of Black-Clawson (ANZ) Pty., Ltd., with offices at 374 Little Collins Street, Melbourne.

N. T. Jelbert

A. T. Moore

A. E. Staley Manufacturing Co., corn and soybean processor has appointed George A. T. Moore administrative sales assistant of paper sales.

Mr. Moore joined the Staley company as an industrial salesman, following graduation from Syracuse University in 1950. He became a senior salesman in 1952, and has served in successive periods as assistant manager of the company's Philadelphia and Chicago offices.

General Aniline & Film Corp., announces the establishment of a new and separate pigment department in line with the increasing emphasis and importance of pigment manufacture, research, sales and applications, Dyestuff and Chemical Division.

Until now, the company has handled both pigments and dyes as a unit in sales and production, but from now on major changes in personnel alignment and sales reorganization will mark a significant shift in company policy.

Robert E. Brouillard, who was recently appointed sales manager — pigments, as a first step in the new program, announces the following new appointments: Leon Katz, product manager—pigments; Maurice L. McCord, Western regional manager; John D. Shaw, Eastern regional manager; Theodore B. Smock, Mid-Western regional manager; and Emil A. Wich, manager technical services.

Dr. Katz joined General Aniline in 1953 after several years with American Cyanamid Co. and Schenley Laboratories. Until his current appointment, he had been section manager in charge of pigments and dyestuff research and development. In his new position, he will be responsible for all long and short range pigment programs designed to maxi-

FINCH, PRUYN AND COMPANY, INCORPORATED

GLENS FALLS, NEW YORK

A REPORT OF WHICH WE ARE PROUD!

NEW BROUGHTON B-12 WHITE WATER SHOWERS have been in operation for over six months at FINCH, PRUYN & CO. in Glens Falls, N. Y.

A. E. Broughton & Co.
Glens Falls, New York

Attention: Mr D. Newcomb

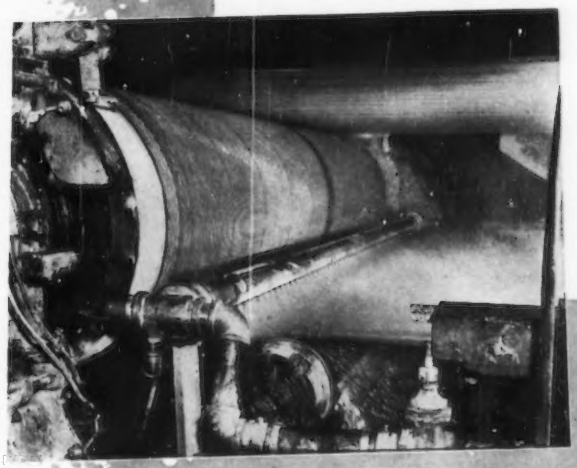
Dear Doug;

We thought you would be happy to know we are very well pleased with the operation of our new Broughton Stock Roll showers. The comments from our operating personnel ran from "very good" to "a tremendous improvement over any stock roll shower we have operated".

Very truly yours,

Finch, Pruyn & Co.

L.J. Dolhof



You will be equally enthusiastic when you learn the unprecedented advantages of these revolutionary showers!

NOZZLES CANNOT STAY PLUGGED! The B-12 WW showers are automatically self-cleaning on timed intervals.

NO LOSS OF CLEANING POTENTIAL! There are no deflectors or moving parts in nozzles to impede the full force of the white water.

NO REFUSE FLUSHED ONTO CLEANED SURFACES! All dirt is discharged into the drain—not through the nozzles.

NO MANUAL ATTENTION NECESSARY! No matter how rich the white water, just set the timer and forget it!

THE BROUGHTON B-12 WW SHOWERS can be used with GUARANTEED SATISFACTION, WHEREVER WHITE WATER SHOWERING IS DESIRED!

For further information, phone collect or write—TODAY

BROUGHTON
SYSTEMS FOR PAPER MACHINES

A.E.Broughton & Co., Inc.

Glens Falls, New York Cable Address: Broughtco Tel. 2-6541

mize sales and profits. He attended Trinity College and the University of Illinois.

Mr. McCord joined GAF in 1934, at the General Dyestuff Co.'s offices in San Francisco, where he has held a number of posts, including sales representative and office manager. He will make his headquarters in San Francisco and will be responsible for pigment sales in the Western area. He is a graduate of the University of Iowa and lives in San Anselmo, Calif.

Mr. Shaw has held various laboratory and field sales positions since he joined General Dyestuff in 1928. In his most recent assignment, he served as pigment sales specialist responsible for sales to dry color houses. He will be located at the company's home office on Hudson Street, in New York City and will be responsible for pigment sales in the Eastern area.

Mr. Smock, who attended Yale University, New York University and the University of Southern California, joined General Dyestuff in 1937. His service was interrupted by the United States Army, where he served as Captain of Ordnance. Since 1939 he has been in charge of the Los Angeles office. He will make his headquarters in Chicago and will be responsible for pigment sales in the Mid-Western area.

Mr. Wich joined the company after graduation from the Polytechnic Institute of Brooklyn and experience at Collway Colors, Inc. He has served in various laboratory and sales capacities, including manager of the pigment technical department and most recently as product engineer. Mr. Wich will be located at 435 Hudson Street, New York City, and will be responsible for coordination of technical activities with field sales and the internal operations of the new pigment department.

CHAS. T. MAIN, INC.

ENGINEERS

PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION

PULP AND PAPER MILLS

STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING REPORTS, CONSULTATION, VALUATIONS

●

BOSTON, MASSACHUSETTS

CHARLOTTE, NORTH CAROLINA

THE WHEELER ROLL CO.

EXPERIMENTAL

PAPER and COATING MACHINES

10 inches to 30 inches wide.

Variable Speeds

WHEELER ROLL CO.

Kalamazoo

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Nov. 14	Nov. 21	Nov. 28	Dec. 5	Dec. 12
1959	96.5r	96.3r	94.0r	95.4r	95.0
	Nov. 15	Nov. 22	Nov. 29	Dec. 6	Dec. 13
1958	91.2	91.0	87.7	91.6	90.6

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.8	90.5	93.2	94.4	95.3	95.6‡	84.6‡	96.0‡	94.7‡	97.3‡	95.4‡	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	90.7	93.7	92.3	95.9	98.5	91.1	87.0	92.7
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Nov. 14	Nov. 21	Nov. 28	Dec. 5	Dec. 12
1959	95	95	91	86	96
	Nov. 15	Nov. 22	Nov. 29	Dec. 6	Dec. 13
1958	94	94	88	84	94

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	89	94	95	94	96	96	83	97	92	97	94	—	—
1958	84	86	87	84	85	86	76	93	90	95	93	77	86

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Dec. 12, 1959	LAST WEEK ENDING Dec. 5, 1959	CUMULATIVE TO DATE Jan. 1 to Dec. 12, 1959 incl.
% Activity	96%	86%	93%
TOTAL	329,400	295,929	15,279,580
Liner	106,894	99,845	5,300,858
Corrugating Material	51,154	47,660	2,340,830
Chip & Filler Board	4,644	3,536	242,546
Total Containerboard	162,692	151,041	7,884,234
Folding	59,866	50,843	2,724,013
Set-Up	11,047	12,044	582,478
Special Food Board	27,715	24,933	1,362,911
Other	68,080	57,086	2,725,944
Total Boxboard	166,708	144,888	7,395,346
Total Orders			
Received	299,494	338,553	
Unfilled End of Week	450,586	476,497	

CELGAR, LIMITED

orders two

KAMYR

continuous cooking units

for its new

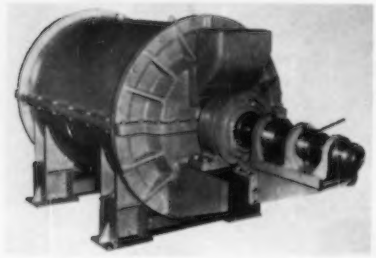
bleached Kraft mill.

Capacity 500 AD tons per day

For Information Contact KAMYR INC., Hudson Falls, N. Y.

West Coast Representative: A. H. Lundberg, Inc., 7835 S.E. 30th St., Mercer Island, Washington

PJT NEW EQUIPMENT & SUPPLIES



Stone-Filled Refiner For High Density Stock

A cylindrical stone-filled refiner for use on screen rejects, impregnated chips and high density pulp has just been introduced by Appleton Machine Co., Appleton, Wis. Ruggedly built, the new unit refines with a minimum reduction of fiber length, and with very low power consumption. Called the Centri-Mill, it also features adjustable three-stage operating clearance of the rotor.

Both the rotor and shell portions are equipped with Norton artificial stone filling, thus providing the stone-on-stone principle which has been found so suitable in high grade groundwood mills. Shafts and pins, including mainshaft, are of stainless steel. The individual rotor stone segments are cushioned with velumoid and clamped into bronze shoes. The spiders or hubs on the main shaft are bronze. The interior portions of the cast iron body which come in contact with stock are lithcote lined.

The cylindrical shell portion of the machine is made up of seven artificial stone rings, split horizontally, which are cemented into a steel cartridge, which in turn is held within the outer casing of the machine.

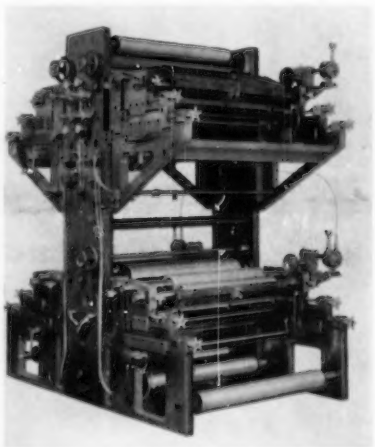
The rotor portion of the machine is made up of 24 stoneshod members which are pivotally mounted on heavy stainless steel hinge pins, and are permitted to retract ½-inch toward the center of the machine, but are prevented from outward movement beyond a certain fixed point which is mechanically controlled. The diameter of the rotor is adjustable in three different sections of its length, which is accomplished by heavy wedge shaped bronze cams inside the tubular main shaft, and which are in turn connected to an exterior control mechanism.

When the unit is in operation there is ordinarily a slight clearance between this rotor and the shell lining. The amount of this clearance depends upon the desired end-product. The refiner operates with the main body of the interior filled with air, the stock being forced by centrifugal force into a film against the shell lining. This character of operation produces a minimum of hydraulic load. At the same time the construction of the rotor is such that it results in a uniform working pressure between the rotor and shell lining.

The Centri-Mill is equipped with V-belt drive and requires a 125 h.p. constant speed motor. The rotor is 32 inches in diameter by 52 inches in length.

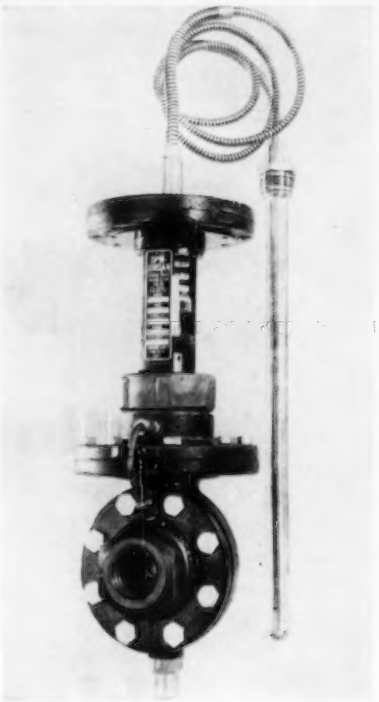
Four Color Flexographic Presses Announced

The manufacture of stack-type four color flexographic presses has been announced by Faustel, Inc., 5109 North 125th St., Butler, Wis. The new press features two, three and four printing units on a four-color frame. There is a 42-inch drying distance between colors, and the unit may be used in a variety of widths to 42 inches. It is a high-speed press that also features completely enclosed fountain, variable speed control of ink rolls, and running register control in all directions.



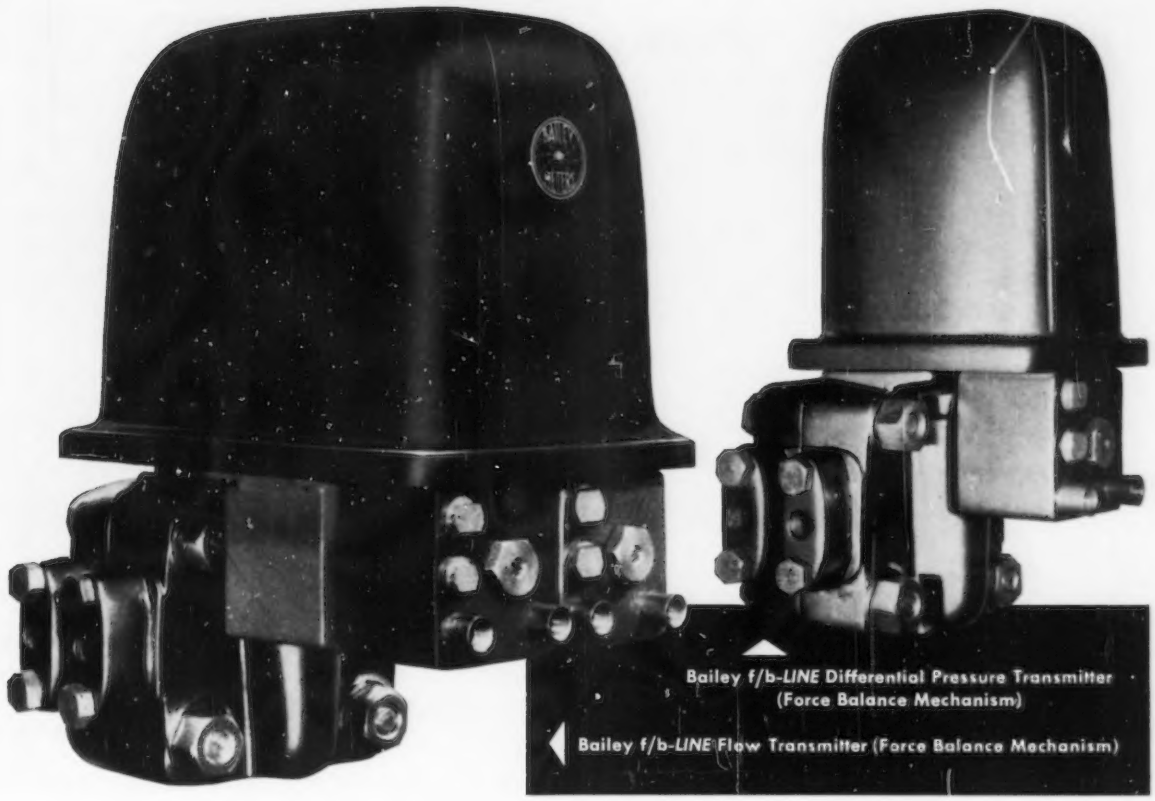
Temperature Control Valves for Rugged Service

Piloted temperature control valves in ¼ inch-2 inch sizes are now available from OPW-Jordan. Designed for sensitive control of rugged



pressure drops, these valves have wide application in industry to control temperatures of instantaneous heaters, oil preheaters, storage heaters and for process heating and cooling applications. They have sliding gate, self-lapping, self-cleaning seats to insure positive tight shut-off during lock up and accurate regulation during operation.

The new valves are available from stock in ductile iron and bronze bodies and are suitable for pressures to 250 p.s.i. and temperatures to 500°F. There are ten temperature control ranges from 35-450°F. and capacities range from 12 to 6600 pounds of steam per hour or 1 to 175 gallons of water per minute, depending on pressures. Capable of accurate control with a pressure differential across seats of 125 p.s.i, they are suitable for heating or cooling applications. Thermal systems are available in copper, stainless steel, carbon steel, monel, lead coated or plastic coated, according to need. For more engineering information, specifications and prices write OPW-Jordan, 6013 Wiehe Road, Cincinnati 13, Ohio.



Bailey f/b-*LINE* Differential Pressure Transmitter (Force Balance Mechanism)

Bailey f/b-*LINE* Flow Transmitter (Force Balance Mechanism)

Two new Bailey *f/b-LINE* Transmitters

permit new accuracy in measuring flow and differential pressure

Pneumatically transmits rate of flow—or differential pressure—measurements to indicating, recording, and/or controlling equipment at remote stations. Transmitters consist of a diaphragm measuring mechanism and a force balance pneumatic transmitting unit.

APPLICATION

For steam, water, air, gases and other fluids producing differentials across primary elements from 0-2 in. H_2O to 0-2000 in. H_2O at maximum service pressure of 50, 1500, and 5000 psig.

FEATURES

Transmits a Signal Directly Proportional to Rate of Flow. Uses receiver with uniformly-graduated chart or scale. Eliminates need for external square-root extractors or characterizers.

10 to 1 Turndown. Differential range of each diaphragm measuring element may be changed by factor of 10 to 1; e.g., 0-20 in. H_2O diaphragm may also measure 0-2 in. H_2O.

Screwdriver Adjustments. Range and zero adjustments readily accessible. Range may be changed with screwdriver adjustment.

Overpressure Protection. Protects against full service pressure applied to either side of diaphragm.

Fast Response. No viscous dampers needed, so speed of response is very fast.

Corrosion Resistant. For maximum differentials between 20 and 2000" H_2O, all parts in contact with process fluid may be stainless steel. No sealing fluids or sealing diaphragm required.

Good Stability. Reset type boosters give good stability with high gain.

Versatile Mounting. May be mounted on process piping, wall, or separate mounting pipe using same bracket.

For additional information, call your local Bailey District Office, or write direct.

P46-1

PULP AND PAPER DIVISION

BAILEY METER COMPANY

1056 IVANHOE ROAD • CLEVELAND 10, OHIO

In Canada—Bailey Meter Company Limited, Montreal

BAILEY METERS

J. E. SIRRINE COMPANY

Engineers
Since 1902

Pulp & Paper Mills
Water Supply
Waste Disposal
Steam & Hydro Power Plants
Appraisals
Textile Mills & Finishing Plants
Surveys & Reports

GREENVILLE,
SOUTH CAROLINA

Prices of Fibers

MARKET WOOD PULP

FOURTH QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	§90.00/ —	§80.00/ —	§90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	§157.00/162.50*		§157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		§137.00/ —		
Kraft, Semi-bleached	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances.

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED DECEMBER 15

Grade	Atlanta	Memphis	Dallas	Los Angeles
1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	$7.50/ —	8.50/ —
3	$7.00/6.00	$8.00/7.00	7.00/6.50	8.00/ —
4	6.00/5.25	6.26/5.75	6.25/5.25	7.50/6.50
5	5.25/4.75	5.00/4.75	4.75/4.50	7.00/6.00
6	4.75/3.50	4.50/4.25	4.00/3.25	5.00/3.75
7	3.50/2.50	3.50/2.75	3.00/2.50	2.75/ —

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Dec. 21	Dec. 21	Dec.	Dec.
No. 1 Mixed Paper	$ 10.00/ 12.00	12.00/ 14.00	9.00/ —	13.00/ 14.00
No. 1 News	14.00/ 15.00	14.00/ 15.00	16.00/ —	16.00/ 15.00
Overissue News (Lg. size)	13.00/ 15.00	13.00/ 15.00	21.00/ —	19.00/ 20.00
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	14.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	21.00/ —	23.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	— / —	30.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	32.50/ 35.00	35.00/ —	32.50/ —	35.00/ —
(Semi-chem. medium)	45.00/ —	45.00/ —	42.50/ —	36.00/ —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	24.00/ —	35.00/ —
White Newsblanks	65.00/ 70.00	53.50/ 60.00	45.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	60.00/ —	70.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 57.50	55.00/ 57.50	52.50/ —	42.50/ 45.00
Manila Tab. Cards	75.00/77.50	75.00/77.50	75.00/ —	70.00/ —
No. 1 Col. Ledger	40.00/ 45.00	37.50/ 42.50	45.00/ —	31.00/ —
White Ledger	60.00/ 62.50	60.00/ 65.00	55.00/ —	55.00/ —
Mixed Book & Mag.†	22.00/ 25.00	— / —	15.00/ —	— / —
No. 1 Books‡	22.00/ 24.50	17.00/ 19.00	32.50/ —	17.50/ 19.50

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

always in the market

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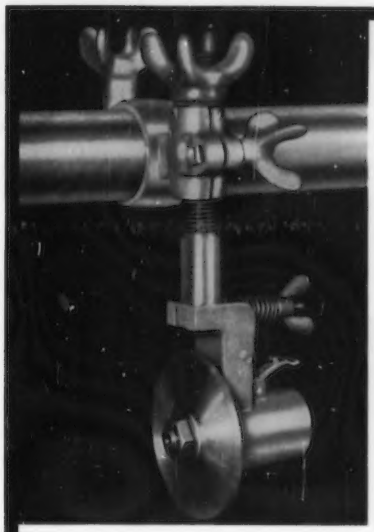
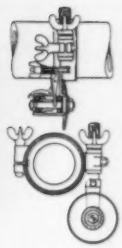
graders and packers of waste paper

PIONEER PAPER STOCK COMPANY



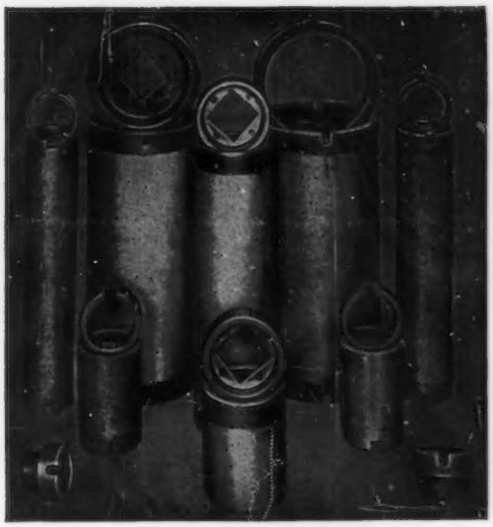


TOP SLITTER UNIT

THE MOORE & WHITE CO.

330 East Hunting Park Avenue, Philadelphia 24, Pa.

West Coast: Stephen Thurlow Co., 1912 Minor Ave., Seattle, Wash.



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CORES CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.
CORINTH, N. Y.

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THE ONLY . . .

"Pneumatic Brake"

FOR THE ONLY . . . . . Shaftless Backstand Economically Priced!

This type stand with Pneumatic Brake has been used successfully with a 72" diam. x 120" face roll (weight of roll approximately 7 tons).

Push Button Loading • Pneumatic or Manual Braking • Lateral and Longitudinal Roll Adjustment • Chucks for 3"-12" Cores

WRITE FOR SPECIFICATIONS

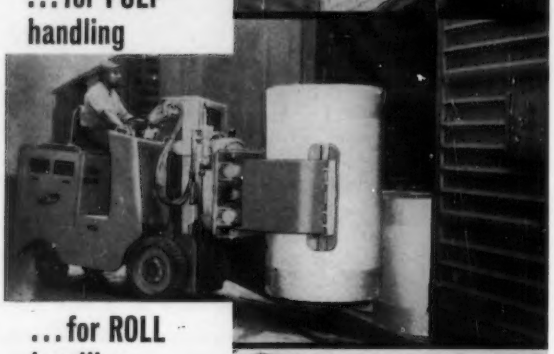
H AMBLET MACHINE CO.

LAWRENCE, MASSACHUSETTS

In Paper Mills

ELPAR Trucks

...for PULP handling



...for ROLL handling

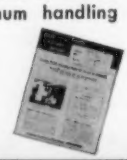
...for handling Packaged Stock

Operate for ⅓ the Cost!

• On handling jobs like these, and scores of others like them, ELPAR trucks have chalked-up a remarkable record for low cost operation. Reduced maintenance . . . economical electric power . . . outstanding dependability are the reasons.

A complete line of fork and platform trucks, backed up by qualified experience in the application of trucks for paper handling jobs, assures maximum handling performance.

For complete details contact your local ELPAR representative, or . . . Send for this NEW Paper Handling Folder.



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THE ELWELL-PARKER ELECTRIC COMPANY

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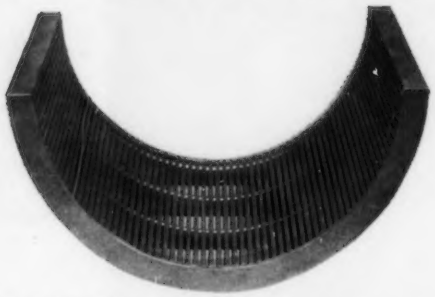
REDUCE BLINDING

raise paper and pulp production



Hendrick Wedge Slot is made with small openings to assure fine screening. Yet, the special Wedge Slot construction affords far greater draining and screening capacity than many other types.

Here's another big plus: Wedge Slot's profile bars are "precision shaped" to maintain uniform width of slot openings the entire length of the screen as wear progresses.

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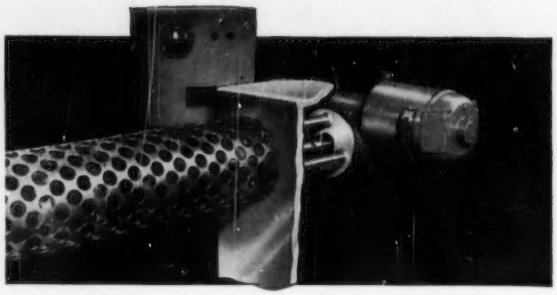
Perforated Metal • Perforated Metal Screens • Wedge-Slot Screens • Hendrick Wedge Wire Screens • Architectural Grilles • Mitco Open Steel Flooring—Shur-Site Treads • Armorgrids • Hydro Dehazers • Distillation Column Internals.

SANDY HILL

Distributor Roll



A standardized package unit, designed for installation in new or existing head-boxes and cylinder mould vats. Produces excellent dispersion of fibres in the whole slurry.

- Direct connected motor
- Roll quickly removable
- Bearings and packing-rings water-lubricated

Write for additional information

THE SANDY HILL IRON AND BRASS WORKS

HUDSON FALLS, N. Y.

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$5,000 to $50,000

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Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

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GEO. M. SUNDAY & ASSO.

PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES

6 East Monroe, Chicago ANdover 3-1970

Help Wanted

Felt Mill Superintendent

For 90 ton capacity mill in Chicago area employing approx. 65 men. Incentive bonus plan with excellent opportunities for advancement. Give enough details including experience, references, salary requirements, age, to warrant interview. Replies strictly confidential. Box 59-354 care Paper Trade Journal. D-28

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MILLWRIGHTS WITH ALL-AROUND PAPER MILL EXPERIENCE ON MAINTENANCE AND CONSTRUCTION WORK WITH A MODERN MILL. ALL WORK WILL BE SHIFT WORK—NORMALLY SEVEN (7) DAYS PER WEEK. GOOD PAY. GOOD WORKING CONDITIONS. KINDLY SEND RESUME TO:

WHIPPANY PAPER BOARD CO., INC.
JEFFERSON ROAD,
WHIPPANY, NEW JERSEY

J-4

WANTED

CHEMIST OR CHEMICAL ENGINEER

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Excellent Opportunity Available In
New, Fully Equipped Research Laboratory

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Need Project Leader for Studies in
Kraft Pulping, Bleaching, and By-Products Research

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Modern, Integrated Mill Producing Bleached Pulp
And Fine Printing and Specialty Papers

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Excellent Growth Opportunities With Expanding
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Direct Experience Preferred, But Not Essential

* * * *

Send Resume To: Personnel Department

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Phone — Spring Grove 3216

D-28

Help Wanted

Opportunities for Engineers at our Sunbury, Pa. Plant

TECHNICAL SERVICE SUPERVISOR

B.S. or M.S. Chemistry or Chemical Engineering with 5 years quality control or technical service experience in fiberboard or paper making field. To provide technical assistance to our various fiberboard plants as well as sales department, and to supervise centralized laboratory for quality control and service studies.

ASSISTANT QUALITY CONTROL SUPERVISOR

B.S. Chemical Engineering or equivalent, with minimum of 2 years experience in insulation board production or research and development. Training to include departmental supervision, control testing, improvement of existing products, and various technical studies.

Please send resume outlining personal data, educational background, work experience and salary requirements to

PERSONNEL MANAGER
Barrett Division
ALLIED CHEMICAL CORP.
40 Rector St. — New York 6, NY

D-28

SALES REPRESENTATIVE

Paper Machine Clothing, For Mid-West

Leading manufacturer of paper machine clothing interested in a top quality man for sales in Mid-western states. Experience and close connections with paper mill personnel very important. Age range 30 to 40 preferred, salary and bonus basis. Apply giving educational background, work experience with paper industry and relevant personal data to Box 59-352 care Paper Trade Journal. Replies held in strict confidence. J-4

QUALITY WAX PAPER MANUFACTURER WANTS SALESMAN TO CALL ON "CONSUMING TRADE", also OTHER SALESMEN TO CALL ON THE "PAPER JOBBING TRADE" IN THE EASTERN AREA. EXPERIENCE IN THIS FIELD ESSENTIAL. ADDRESS BOX 59-353 CARE PAPER TRADE JOURNAL. D-28

Help Wanted

WANTED

For 500 ton Kraft linerboard mill being built at Counce, Tennessee. Located on Tennessee River below Pickwick Dam, an area of pleasant living conditions with excellent recreational facilities.

Paper Mill Superintendent
Technical Assistant to Paper Mill Superintendent
Paper Mill Tour Foremen
Technical Assistant to Pulp Mill Superintendent
Pulp Mill Tour Foremen
Pulp Process Chemist
Paper Process Chemist
Laboratory Supervisor
Special Project Chemist
Superintendent of Maintenance
Maintenance Supervisors
Chief Electrician
Shipping Supervisor
Traffic Manager
Purchasing Agent
Storekeeper

The above men must be able to help plan and organize their departments, help select and train personnel, and plan and direct day to day activities of the department. Education and experience in southern kraft mills indicating ability to accomplish the above will govern selection.

TENNESSEE RIVER PULP & PAPER COMPANY
P. O. BOX 33
Counce, Tennessee

J-4

The National TAPPI Staff is seeking a man interested in working with the Association's technical divisions. Several years of industrial experience preferred. Broad interest in many branches of the industry important. Applicants please send complete résumé of education and experience to P. E. Nethercut, Secretary-Treasurer, TAPPI, 360 Lexington Avenue, New York 17, New York. D-28

TECHNICAL SALESMAN

Experienced Paper Mill Salesman familiar with lightweight papers (no kraft or board) to sell Food Processors, Converters, Merchants. Excellent future for right man. Near New York City. All replies confidential. Reply with full information to Box 59-351 care Paper Trade Journal. F-1

Help Wanted

Assistant Manager—Export Sales

Manufacturer of stock preparation and pulp mill equipment needs M.E. with paper making background. Should know mill applications and problems. Language (Fr. Ger., Sp.) desirable but not essential. Some foreign travel. Salary open.

Send complete resume to:

E. D. Jones Corporation
F. Bradley, V.P.
Pittsfield, Mass. J-11

SUPERINTENDENT

Are you interested in a challenging opportunity with an excellent future? We want a man with real ability, age 35-45 who is thoroughly familiar with the manufacture of lightweight Fourdrinier Specialty Papers. Paper School Graduate preferred. New York vicinity. State full background and experience. All replies confidential. Reply Box 59-350 care Paper Trade Journal. F-1

Situations Wanted

Gen. Superintendent or Supt.

Experienced paper maker. Extensive experience in the manufacture of folding, setup and pat. coated board. Familiar and capable of solving all problems that arise in manufacturing of board, power and maintenance. Presently employed. Box 59-346 Care Paper Trade Journal. D-28

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—In manufacture of boards & papers; their conversion; and film. Wishes change for challenging opportunity. Successful record in production; organization; labor relations, & development. Address Box 59-137 care Paper Trade Journal. D-28

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Technically trained and experienced Sales Engineer, 41 years old, with 20 years experience in Pulp and Paper production and equipment sales desires to establish immediate representation as manufacturer's agent for Pulp and Paper mill equipment and supplies. Write Box 59-343 care Paper Trade Journal. D-28

MANAGER, important South American firm handling sales of imported pulp and paper. Speaking fluent English, Spanish and Swedish is interested in obtaining position with good possibilities in American firm. Address Box 59-349 care Paper Trade Journal. D-28

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IMMEDIATE DELIVERY

1—86" Farrel 8-Roll Calender Stack. A. F. Bearings. Full set of Doctors.
1—8" Pusey & Jones 7-Roll Calender Stack.
1—30" Dia. x 130" Face Farrel Roll Grinder., Complete.
1—5' x 86" Pusey & Jones Yankee Dryer.
1—92" Langston Winder equipped with both score and shear cut slitter devices.
1—86" Warren Winder Complete. Recently rebuilt with new drums and new A. F. Bearings and Housings.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—84" Kamyr Machine, 75 Ton per day.
10—48" x 150" Pusey & Jones Dryers.
7—36" & 72" Pusey & Jones Dryers.
1—E. D. Jones Majestic Jordon No. A-482. S.S. Fillings.
1—74" Seybold Trimmer & Cutter Z-12.
1—45" Seybold Trimmer & Cutter with 5 H.P. 220/440 Volt Motor. Rebuilt.
1—42" Dia. & 110" Face Pope Reel.
1—25" Dia. x 156" Perforated Face Sandusky Suction Couch. Complete.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch. Complete.
1—22" x 111" Vertical Size Press with Microrock and Rubber Rolls. A. F. Bearings with frame work. Pneumatically loaded.
1—24" x 102" Extractor Rolls. 20" Dia. Rubber Top Roll mounted with A. F. Bearings and Frame work. Spare Rolls.
1—22" x 96" First Press with Microrock Roll and Rubber Roll.
1—22" x 110" Press with Microrock Roll and Rubber Roll.
1—10-Knife Carthage Chipper with A. F. Bearings.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227.
1—#3A Bird Screen. S.S. Plates.
1—Hudson Sharpe Toilet Tissue Converting Machine. Serial #2123.
2—Packer 12-Plate Flat Screens. S.S. Bodies #.22 S.S. Plates. Less than 5 Years Old.
1—36" x 96" Saveall, Rubber Couch, S.S. Vat, A.F. Bearings.
1—Hummer Vibrating Screen.
1—Seybold Knife Grinder. Size G. 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—53" Dia. x 66" Face Dilts 2000-lb. Iron Tub Beater with S.S. Hood.
16—Beater Rolls and Stands. Various Sizes.
5—Triplex and Duplex Pumps. Various Sizes.
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1—8' x 10' Oliver Continuous Filter. Steel Tub.
1—100 H.P. Terry Turbine, Type G, 3615 RPM, 250 lbs. Steam Pressure. Back Pressure 35 lbs. Fully automatic with Terry Speed Reducer.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—250 H.P. Ingersoll-Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.
3—75 KVA G.E. Spirakore Transformers. Type HS, Class OA, 2400/4160 Y Primary to 120/240 Secondary.
1—60 H.P. G.E. Gear Motor, T.E.F.C. 440 Volts, 1730 Max./427 Min. RPM, 4.15 to 1 Ratio.
1—15 H.P. West. Gear Motor, T.E.F.C. 220 Volts, 87 RPM.
1—7½ H.P. West. Gear Motor, T.E.F.C. 550 Volts, 1165 RPM to 29 RPM.
1—7½ H.P. G.E. Gear Motor, T.E.F.C. 220/440 Volts, 1738 RPM, 9.2 to 1 Ratio.
1—Horton Clutch, AF. Bearings.

1000 Electric Motors from ¼ H.P. to 600 H.P. in Stock

The above is but a small part of the laventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

Write—Wire—Phone For Your Needs

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
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QUALITY GUARANTEED MACHINERY ERECTED FOR YOUR INSPECTION

CALENDER STACKS
1— 58″ M & W 9 roll
1— 66″ M & W 5 roll
1— 80″ P & J 7 roll; heavy duty
1— 82″ Lobdell 5 roll
1— 86″ Lobdell 5 roll
1—115″ B-C 7 roll
2—124″ Downingtown 5 roll & 6 roll
1—128″ Downingtown 7 roll

CHIPPERS
1— 88″ Murray 10 knife w/600 hp motor
1— 96″ Murray 6 knife; A-F Brng.

COATERS
1— 24″ Waldron Coater & Embosser
2— 38″ Waldron Reverse Roll Coater w/drive
2—40″ Cameron Extrusion Type.
3— 65″ & 76″ Mayers

COMPLETE MACHINES
3—Sandy Hill 81″ trim single cyl. Tissue
1—M & W 3 cyl. 50″ trim Board Mill complete
1—M & W 72″ Fourdrinier paper machine

CYLINDER MOLDS
2— 63″ face x 36″ dia w/rubber couches
1—104″ face x 36″ dia
1—107″ face x 48″ dia; A-F Brng
2—111″ face x 36″ dia; A-F Brng
1—131″ face x 42″ dia.; A-F Brng
1—136″ face x 54″ dia; SS covering

CYLINDER WET ENDS
Downingtown single cylinder; 99″ face x 48″ dia.; 18″ dia. couch

DRYERS—HYDROSTATICALLY TESTED
24″ Dia.:
38—46″ face; Chrome plated
1—156″ face w/gear and steam joint

28″ Dia.:
3— 70″ face w/gears & bearings
3— 73″ face w/gears & bearings
3— 76″ face w/gears & bearings
3— 77″ face w/gears & bearings
2— 84″ face
2— 84″ face w/accessories

36″ Dia.:
1— 42″ face
2— 44″ face
2— 46″ face
22— 54″ face; complete section
4— 70″ face w/gears & bearings
11— 72″ face w/gears & bearings
1— 74″ face Lukenweld w/A-F Brng
1— 74″ face w/gears & bearings
3— 75″ face w/gears & bearings
9— 76″ face w/gears & bearings
1— 77″ face w/gears & bearings
1— 78″ face w/gears & bearings
2— 80″ face
5— 84″ face
3— 88″ face
18— 90″ face; complete section
1—178″ face
10—160″ face

42″ Dia.:
24—102″ face; complete section
1—106″ face
1—110″ face
40—118″ face; complete section
1—120″ face
1—160″ face

48″ Dia.:
57— 46″ face; chrome plated
1— 82″ face w/gears & bearings
24—110″ face w/frames & bearings
10—123″ face w/gears, frames & bearings
1—128″ face
12— 82″ face
5— 84″ face

DRIVES—ENCLOSED RIGHT ANGLE
1—Michigan 92½ h.p. ratio 10.1 to 1
1—50 h.p. Reliance VS with MG set & controls; 850-1200 r.p.m.
1—Beloit 65 h.p. Ratio 2.88 to 1
1—Phila. 28 h.p. Ratio 10.56 to 1

EMBOSSERS
1— 80″ Hudson Sharp; A-F Brng
2— 62″ Textile Machinery Co; w/drives

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1—New Oliver 7′ dia American 7 disc; all SS; Reliance Drive
1— 6′ face x 3′ dia Dorr-Oliver
1— 10′ face x 8′ dia Oliver chem. sludge filter

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2— 12 Plate IMPCO w/Dunbar Drives
1— 4 plate Tailing Screen

INLETS & HEADBOXES
1—112″ Valley w/8″ distributing roll

JORDANS
2—B-C #00; like new
2—Appleton #1 w/A-F Brng
3—Emerson #1 w/125 hp motors
1—Emerson #2 w/150 hp motor
1—N & W Ponv w/75 h.p. motors
1—Horne w/AF Brngs

MOTORS 3 PH 60 CYCLE
1—100 hp GE; 440 v; 695 rpm
2—100 hp GE; 440 v; 430 rpm
1—350 hp GE; 2200 v; 720 rpm: Synch

PAPER MACHINES DRIVES
1—GE 65 hp shunt wound DC motor w/75 hp AC motor, MG set & excitor
1—De Laval 100 h.p. steam turbine w/reducers

PULPER
1—Dilts 16 ft. complete w/125 h.p. motor, elec. hoist & oil pump

PUMPS—OPEN IMPELLER
1—Shartle 8 x 16 Triplex
23—Centrifugal Stock and Water Pumps

REELS
1— 36″ Kohler Automatic 2 arm unwind reel
1—100″ Kohler automatic two arm unwind reel; 60″ dia rolls; new condition
1—116″ Downingtown two bowl A/F Brngs
1—123″ Beloit—2 bowl
1—150″ B & S pope type w/Reliance drive

REFINERS
1—#1 Dilts Hydrafiner
2—#1 Claflin: A-F Brng
2—#4 Dilts Hydrafiners
1—24″ Bauer Double Disc w/two 50 h.p. motors
1—24″ Downingtown Weiner; new
1—Model 185E Bauer w/two 150 h.p. motors
2—Model 410-1 40″ Bauer; w/two 400 h.p. motors, feeders and conveyors; used 6 mos.

ROLL GRINDERS
1—124″ x 30″ Farrel w/crowning device
1—208″ x 32″ Farrel w/crowning device

ROLLS
Distributor—Stainless Steel
2— 8″ dia. x 115″ face
1— 6½″ dia. x 115″ face

Couch—Rubber Covered
1—14″ dia. x 158″ face
2—15¼″ dia. x 136″ face
1—16″ dia. x 96″ face
2—16″ dia. x 198″ face
3—17½″ dia. x 135″ face
1—18¼″ dia. x 84½″ face
1—18″ dia. x 108″ face
2—16″ dia. x 65″ face

Press—Rubber or Brass Covered
71 Miscellaneous sizes. Drawings available

Felt—Steel, Brass, Rubber Covered
335 Miscellaneous sizes. Drawings available

Calender—Chilled Iron
72 Miscellaneous sizes. Drawings available

ROTARY SCREENS
5—Bird #3A, Model 100 w/SS or copper vats
1—Jones Leithwalk copper lined

SAVEALL
1—100″ face x 48″ dia. Shartle w/steel vat, A-F Brng & motor drive

SHEETERS—DOUBLE KNIFE
1— 64″ Dillon
1—157″ Masson-Scott; like new

SHEETERS-SINGLE KNIFE
1— 36″ Beck w/layboys & backstand
6— 56″, 60″, 66″, & 70″ Hamblets w/backstands
1— 65″ Kidder w/elec. eye and laybov
2— 82″ Hamblets w/backstands & layboys
1—105″ Hamblet
1—110″ Hamblet w/layboy
1—112″ Hamblet Heavy duty, roller bearing, w/layboy, backstand, monorail, etc. New 1954

SLITTERS AND REWINDERS
18″ Maximum Rewind Diameter
1— 72″ Cameron Type 26-3 A Duplex

24″ Maximum Rewind Diameter
1— 32″ Cameron Type 6
3— 42″ Cameron Type 6
1— 42″ Cameron Type 6 Shear Cut
2— 48″ Langston Duplex Shear Cut
2— 52″ Cameron Type 6
1— 62″ Cameron Type 8
1— 72″ Cameron Type 9-5

30″ Maximum Rewind Diameter
1— 42″ Essex Duplex Shear Cut; A-F Brng
1— 60″ Langston Shear Cut
1— 62″ Cameron Type 6
1— 72″ Cameron Type 10; A-F Brng
1— 72″ Cameron Type 10 Shear Cut; A-F Brng
1— 92″ Cameron Type 28-3 Duplex w/Vari-Drive

36″ Maximum Rewind Diameter
1— 62″ Cameron Type 8
1— 70″ Variable Speed Center Winder
1— 72″ Cameron Type 10; A-F Brng

42″ Maximum Rewind Diameter
1— 40″ Egan Shear Cut; A-F Brng
1— 60″ Kidder Model SH Low Bed
1— 72″ Beloit Shear Cut
1— 82″ Langston Shear Cut; A-F Brng
1— 82″ Cameron Type 8-10
1— 92″ B & S; A-F Brng
1—136″ Cameron Type 18; A-F Brng

48″ Maximum Rewind Diameter
1— 54″ Johnstone; A-F Brng
1— 86″ M & W Four Drum Shear Cut
1—154″ Langston Shear Cut

60″ Maximum Rewind Diameter
1—110″ Cameron Type 18 w/Motor Drive
1—120″ M & W two drum w/75 h.p. drive
1—136″ Langston Type DA Shear Cut; A-F

STOCK CLEANERS
2—1000 g.p.m. Shartle Hydrafuges w/motors
14—Bird Dirtecs; 2″ & 6″ bronze
1—Bird Dirtec 12″. Rebuilt by Bird

SUPERCALENDERS
2— 30″ Norwood 4 roll
1— 63″ Norwood 8 roll; A-F Brng
1— 65″ Norwood 8 roll; A-F Brng
1— 92″ Norwood 7 roll w/drive

SUCTION EXTRACTOR ROLL—DOWNINGTOWN
1—105″ face x 19″ dia. w/L-7 Nash Pump

TRIMMERS—POWER BACK GAUGES
2— 38″ Seybold w/motors
1— 57″ Seybold Precision
3— 65″, 74″, & 84″ Seybold Daytons
2— 74″ & 84″ Seybold 12Z w/air tables
1— 94″ Seybold Precision w/air table

VACUUM PUMPS
7—H-4, ½H-5, & H-5 Nash
3—L-5 & L-7 Nash
2—K-4 & K-7 (new) Nash
6—#2, #3, #4, #6 & #7 Nash Hytors
1—8 x 10 Connersville
2—MD-2 Nash w/motors; new laboratory models

YANKEE DRYERS
1—132″ face x 10′ dia Beloit; 35 psi

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HEADBOX: Cypress with stainless steel adjustable slice with stainless steel pond sides.

PRESSES: The Press Section consists of a straight through First Press and a reverse Second Press followed by a Smoothing Press.

DRYERS: Dryer Section consists of 30-48" x 108" face dryers, plain bearings with open gears; dryer control; steam header, piping from header to dryers and steam joints.

CALENDERS: The First Calender Stack is an 8 roll Pusey and Jones with 18" D. King Roll, with 16" Queen roll and 10" Intermediate rolls. Top roll is 12" diameter.
The Finishing Stack is by Farrell with 24" D. King roll, 18" D. Queen roll and a 10½" D. Intermediates.

These stacks are complete with bearings, all of which are water cooled. The Finishing Stack is equipped with 2 water boxes. There is a complete set of doctors for each stack.

REEL: The reel is a 2 roll stack reel by Black and Clawson.

WINDER: The Winder is a No. 18 Camachine with 14" D. by 115" face drums, complete with rider roll and slitters.

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Blank proposals containing the instructions, schedule, and specifications may be obtained by addressing Raymond Blattenberger, Public Printer, Washington, D.C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates as provided in paragraph 26 of the proposal for paper and paragraph 24 of the proposal for envelopes.

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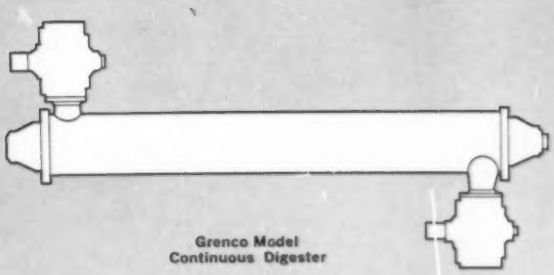

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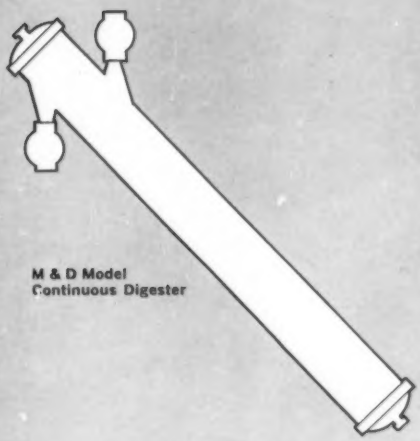

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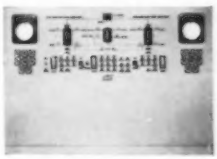

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Luncor is the first PVC valve designed and engineered by a valve manufacturer. Its maintenance-free performance has been proved in corrosive services in:

- PAPER MILLS
- CHEMICAL PLANTS
- FOOD PROCESSING
- BEVERAGE BOTTLING
- PETROLEUM REFINING
- SUGAR REFINING
- WATER TREATMENT
- MARINE INSTALLATIONS

Let your Lunkenheimer Distributor show you the money-saving, high-performance benefits of Luncor PVC Valves. For service recommendations, ask him for a Confidential Corrosion Service Form. Or write: The Lunkenheimer Company, Cincinnati 14, Ohio.

Fig. 2600 Screwed End
Fig. 2601 Socket End
125 lb. W. O. G. 140°F.
Sizes ½ to 2-inch

FREE Piping Practice Wall Chart on Valve Selection, Installation, Maintenance.

LUNKENHEIMER® THE ONE *Great* NAME IN VALVES